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Superintendents Announce Convention Program

J. M. Conway, of Hoberg Paper & Fibre Co.; Judson G. Rosebush, of Northern Paper Mills; and C. K. Andrews, of Blandin Paper Co., to Present Addresses at Green Bay Meeting—Frank P. Vaughan, of Bay West Paper Co., to be Toastmaster at Luncheon on Opening Day—Jim Flynn, of Great Northern Railway, to be Principal Speaker

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., April 3, 1933.—The list of speakers who will take part in the convention of the American Pulp and Paper Mill Superintendents Association at Green Bay, Wis., June 8, 9 and 10 is constantly growing, according to Frank J. Timmerman, general chairman.

J. M. Conway, president of the Hoberg Paper and Fibre Company, Green Bay, whose mill produces more than seventy tons of boards and tissues daily, is to deliver an address on "Your Duties and Mine." Judson G. Rosebush, vice-president and general manager of the Northern Paper Mills, Green Bay, also will speak. Another address of interest will be that of C. K. Andrews, manager of the Blandin Paper Company, who is expected to tell his experiences in the windowless mill at Grand Rapids, Minn. Ventilation and lighting of this mill is artificial throughout. Mill operators no doubt will be anxious to hear how the idea has worked out in practice.

A luncheon is to be held on the opening day at which Frank P. Vaughan, manager of the Bay West Paper Company, Green Bay, will act as toastmaster. The speaker will be Jim Flynn, of the Great Northern Railway.

On recreation day, a sports jamboree will be held, including a novel eighteen hole golf tournament. There will be ample incentive for crack golfers, but ample breaks for the boys who shoot in three figures. The tournament will be planned on the course of the Oneida Golf and Riding Club, comprising 400 acres. A shooting tournament will be staged on the range of the Green Bay-DePere Gun Club.

Green Bay will be an interesting city for the superintendents to visit, Mr. Timmerman says, because it is now known as one of the greatest tissue paper manufacturing centers in the world. The city is also celebrating the tricentennial anniversary of its discovery by Nicolet in 1634. Its surroundings are rich in historical lore and are linked with such names as Joliet, Marquette, LaSalle and Hennepin.

Kimberly-Clark Report Shows Profit

Kimberly-Clark Corporation, of Neenah, Wis., and subsidiaries showed a consolidated net profit for 1932 of $588,755, after depreciation, charges and federal taxes and provision for doubtful accounts, but exclusive of a profit of $108,463 on logging operations, which was credited to surplus.

This was equal to $5.92 a share earned on 99,360 shares of $100 par 6 per cent preferred stock, comparing with $1,762,000 in 1931, or $2.33 a share earned on 499,800 common shares after preferred dividends paid during the year.

Forests Unemployment Relief Program

Wisconsin is ready to take advantage of the forest unemployment relief bill passed by Congress as a means of speeding its reforestation efforts. The state spent $500,000 on similar work through the conservation department last year, 85 per cent of which was paid in wages. The department therefore is all organized to undertake a federal program. It is planned to put from 16,000 to 40,000 men to work immediately in a similar program.

Coal Shipment Season Delayed

Shipment of coal to paper mills via boat will not be resumed this spring until about May 1, according to plans of the government engineering department. Navigation will not be opened until that time. The season usually opens early in April but is being delayed because of work on new locks on the Fox River at Little Rapids, Wis. The rebuilding was planned on a three-year program, but the progress made this winter will result in half of the work being completed by May 1.

Henry Stevens to Wed

The marriage is announced of Henry Stevens, of Appleton, Wis., to Miss Margaret Holdom, of Pelham Manor, N. Y. Mr. Stevens is associated with the Marathon Paper Mills Company, with headquarters in New York. He is a son of Mr. and Mrs. John Stevens, of Appleton.

Bids For Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 5, 1933—The Government Printing Office has received the following bids for 200 sheets of blue cloth lined paper; Whitaker Paper Company, at $16.60 per C sheets; R. P. Andrews Paper Company, $12.50 and $18.20; Lindemeyr Paper Company, $9.17 and $11.00; Mathers-Lamm Paper Company, $11.41; T. A. Cantwell & Company, $12.50; Charles G. Stott & Company, $19.50; Barton Duer & Koch Paper Company, $10.00; and Virginia Paper Company, $20.00.

Chicago Paper Conditions Continue Favorable

Volume of Trading Increases, While Quotations Are Generally Well Maintained—Kraft Wrapping Paper Market Remains Firm and Comparatively Buoyant—Fine Paper Section Displays Fairly Strong Undertone—Paper Stock in Slight Demand

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., April 3, 1933.—Conditions in the Chicago paper market continue favorable. Volume has increased and, while prices have not materially improved during the past seven days, gains that have been made have been held. The kraft market did make some concrete gains during the period and, according to latest reports, the market remains firm and comparatively buoyant. The return of beer is having a beneficial effect on certain classes of paper while the jig saw puzzle craze is still going on in full force. This, of course, is having a beneficial effect on certain markets while the general feeling of optimism is strengthening other lines. As to the State sales tax, a group of jobbers are keeping in touch with the State Department of Finance as to the actual application of the tax, which went into effect on April 1, as applied to this class of trade.

The fine paper market continued fairly strong during the week. Volume in ground woods restored an optimistic undertone, though prices, while firm, have not as yet shown a definite upward trend, according to reports. News print has materially improved as to tone. Paper board is feeling some of the beneficial effects given above. Krafts continue stronger. Book papers show a better tone. The sulphite bond market is reported to be holding its gains, which include a comprehensive improvement in confidence. Waste papers improved slightly as the general market proved stronger.

Illinois Sales Tax Perplexes

The Illinois state sales tax, which went into effect on April 1, has been a source of perplexity for Chicago jobbers and wholesalers who are trying desperately to determine what really constitutes the "ultimate consumer." The tax is three per cent on all retail sales, exempting farm produce and gasoline. Regulations from the Department of Finance at Springfield say that "the test of whether an item is or is not sold at retail is to determine whether or not it is sold for resale." One group of students of the law believe that paper jobbers selling to printers, manufacturers, etc., will have to worry about the tax, inasmuch as printers, manufacturers, etc., are "ultimate consumers."

There are others, however, who feel that the intent of the bill is to tax over-the-counter sales only. This group argues that jobbers, etc., are not subject to the tax because what they sell is either converted into another product and/or is passed on in the ultimate cost of the merchandise finally sold over the counter. For example, a rug manufacturer may buy a quantity of paper with which to advertise his rugs to retailers. He places the cost of that paper into the cost of the rug, along with other expense items—or should. Thus the tax is not collected on the item—complete—until it reaches the hand of the retail rug dealer who attempts to pass the three per cent tax on to the consumer. The Department of Finance, which will administer the new tax, has not as yet published regulations which will clarify this situation. In the meantime some jobbers and printers are collecting the tax, others are ignoring it. Either way these firms seem to be safe. If they do not collect the government is bound to be lenient, at first, and merely show them the error of their ways. If they do collect and find later that they were not included in the law, they may merely refund to purchases as per invoices, etc., Meanwhile the quest for the one "who knows" merrily goes on.

Beer Return Stimulates Paper Business

While the Chicago paper market is fretting and fuming about the retail sales tax and all of its ramifications it is also finding a source of pleasure, to offset the worry, in the return of beer which is to be heralded into the city on April 7—and with promising celebrations scheduled. Apart from the personal gratification which may result from this nonpenal slaking of a fourteen year old thirst, the market is feeling the effect of beer's return in a much more practical way. Business itself has materially improved, an improvement that some wish to lay at the door of repeal on the grounds of pyschology.

However, those paper concerns which sell beer containers, etc., are really swamped with orders now filed by laboring breweries who are working night and day to get ready for the event. An example of the effect of repeal on this type of industry is shown in a dispatch from Rockford, Ill., where the Rockford Fibre Container Company is working twenty-four hours a day and has added fifty employees to fill orders for millions of fiber box beer containers. Anticipating the probable popularity of home consumption of beer after April 6, one of the nation's foremost beer producers has ordered 1,500,000 containers of various sizes and shapes to be used for sales to consumers seeking only half a dozen bottles or so at a time. Inasmuch as this is only the activity of one concern, it is obvious that the paper industry has something really practical to hang its hat on as beer once more makes its appearance.

New Pulp Association Organized

Appreciating the need for cooperative effort and interchange of problems concerning the industry itself, wholesale paper merchants in Illinois, outside of Chicago, have organized and intend to hold a series of monthly meetings throughout the State to discuss these problems and to exchange ideas for developing business to the fullest and most practicable extent. These merchants have selectd Ray Pilcher, of the Pilcher Paper Company, Joliet, as temporary chairman. The next meeting is scheduled for Springfield in approximately one month. At that time the temporary organization will doubtless be perfected. Mr. Pilcher is the son of the former head of Pilcher-Hamilton Company, Chicago, now widely known as the progressive firm of Pilcher-Hamilton-Daily Company.

Chicago Paper Association Meets

The sales tax and its problems entered into the regular meeting of the Chicago Paper Association, which was held at the Bismarck Hotel on March 28. Under the direction of Walter Schulman, president, the members of the association thoroughly discussed the tax and decided to prepare to collect the tax, beginning April 1. The group made this move not yet sure as to whether they would or would not be included in the provisions of the Act. Chet Spaulding, assistant secretary of the National Paper Trade Association, was present at the meeting and gave an interesting

report on activities at the recent national convention in New York City. Attendance was unusually good.

Paper Salesmen's Golf Program

At a recent meeting of the Middle West Division of the Salesmen's Association of the Paper Industry it was announced that Bill Tilden, Eastern Manufacturing Company, was to direct the golfing destinies of the organization for the coming season. The salesmen also were happy to learn that a splendid schedule of golfing events was being arranged with some of the finest and sportiest clubs in the Chicago district slated to receive the good and bad and indifferent golf that the salesmen deal out. Monthly events will be held according to Mr. Tilden, who is no mean shooter himself. Everything will get under way in May and carry on right through the summer months, the season culminating in the big October day when the Association is host to those executives who will be attending the Fall meeting of the National Paper Trade Association. At this last event prizes will be awarded and competition with the Eastern Division again carried out. In the meantime, a classy schedule will be followed under the able direction of Bill Tilden.

Work of Paper Foundation

Phil Howard, managing director of the Paper Foundation, Inc., has been in Idiana and Ohio most of the week in a further effort to swing backing to the project which is expected to feature the Century of Progress Exposition as far as the paper industry is concerned. Mr. Howard has connected, during the past week, with mills, supply houses and associations in the Indiana and Ohio territory. Meanwhile, in the Chicago office, splendid support of both the general exhibit and the individual advertising spaces continues to come in unabated.

News of the Trade

The Swigart Paper Company is taking an effective way to announce the addition of its new series of printing papers manufactured by the Champion Coated Paper Company. An attractive folder, printed on Della Robbia cover, Woodash color, contains samples of the gold stripe series, the silver circle series, the purple crest series, the black dot series and the blue shield series of enamels, coated papers, offsets, eggshells, etc. Photographs are utilized to set off the printing quality of the various grades of paper in the comprehensive line.

According to an official report of business conditions in the Seventh Federal Reserve District, paper and printing groups made some improvement in the number of wage earners but showed a decline in earnings for the week of February 15 as compared to January 15. A total of 291 firms reported 36,520 wage earners, with earnings of $756,000. The number of wage earners increased 0.8 per cent while the earnings declined 3.2 per cent.

Through the Gaw-O'Hara Envelope Company, Chicago, the Claremont Paper Company, Inc., has issued a new descriptive folder on Claremont Kraft, a folder suggesting the tear, fold and crumple tests to the prospective user. "The Look and Feel of Quality" is the subject of the folder which is mailed in a sample of Claremont Envelope Kraft.

Algonquin Paper Co. Operates

[FROM OUR REGULAR CORRESPONDENT]

Ogdensburg, N. Y., April 3, 1933—Reports circulated this week of a suspension of operations by the Algonquin Paper Company have been denied. Officials of the concern said that a schedule of five days a week would continue to be observed with prospects of a return to normal operations soon. The future outlook is regarded as good.

New Bryant Insulating Paper

KALAMAZOO, Mich., April 3, 1933.—Development and manufacture of an entirely new processed, light weight and inexpensive insulating material by the Bryant Paper Company here, was made public today by W. T. Schmitt, executive vice president and general manager.

This new material, which is non-competitive and protected by patents, has met the problems of automotive engineers in their constant battle against weight in cars and noise in airplane cabins, Schmitt says.

Other proven uses for this new product, he says are: Keeping cold in refrigerators and ice boxes and heat in homes; use in all important new health maintenance project of air conditioning in homes and public buildings; saves space in the relative sizes of buildings to the room space inside through the lessening of the heretofore necessity of providing thick walls; and soundproof rooms.

Experiments are being conducted to determine the use of this new Bryant manufacture in refrigerator cars.

In the automobile tests conducted by paper mill representatives and automotive engineers, the material was received with high enthusiasm when it was found that engineers are able to save from 20 pounds of weight in lighter models, to 40 pounds in heavier models of cars. It also developed as a means of making the bodies of cars impervious to engine noises. It will be used in place of the considerably heavier "dum dum" and jute insulations now used.

In tests with small and large airplanes it was found cabins were completely protected against engine and propeller noises. Leading airplane manufacturers already are using the new substance in construction of the new ships, Schmitt said.

Football clothing has been produced for the further use of the new Bryant article. Because of its lightness and inexpensive features and the fact that it sheds water, it is successfully manufactured into gloves and goloshes of the type which can be used for personal comfort at cold weather outdoor sports and games. Plans have been made for this distribution during the coming fall sports season. Glove and boot manufacturers are prepared to fabricate these articles for this purpose.

In the distribution of hot air and steam heat, this new manufacture is found a perfect protection against wastage by using it as a cover over asbestos.

Bryant officials announced the new product is to be marketed under the name of Seapak and is the result of 15 years of experiment with the very light material known as kapok, which is now used in the manufacture of mattresses and government licensed life preservers. The multiplicity of uses for Seapak is constantly being developed by the company. It is being fabricated in the Superior division.

The development of this discovery and its uses will lessen, Mr. Schmitt said, the unemployment problem to a great extent, although he added, Bryant is now employing its complete personnel of 620 employees in four six-hour shifts.

Mr. Schmitt said the general paper business appeared to be substantially improving and there was a much better feeling generally in the trade.

Pratt & Austin Mfg. Co. Moves

[FROM OUR REGULAR CORRESPONDENT]

SPRINGFIELD, Mass., April 4, 1933—The Pratt & Austin Manufacturing Company, Inc., has removed its papeterie and envelope business from the Potter building on Main street to the Brooks Bank Note building on Wilbraham Avenue.

Ontario Paper Mills Moderately Active

Some Manufacturers of Standard Grades of Paper Report Increased Volume of Inquiries for Future Needs—Fine Paper Plants Secure Orders for Book and Offset Papers—Coarse Paper Market Continues Dull, With Light Demand for Wrappings

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., April 3, 1933.—The Ontario paper trade finished up the month of March with only a moderate volume of business for the four weeks and there is nothing very tangible in the offing that would point to a better record during the present month. Sales of all classes of paper continue light and the distributors have to be content with small orders and their sales are pretty much confined to the cheaper grades of stock.

Mill activities are improving slightly and some manufacturers report more enquiries for stock than have come their way in some months. As yet, however, these enquiries have not crystallized into actual business to any extent. There are hopes that the spring months that have already arrived will pep up business and that tonnages may be increased. It is recognized, however, that general business conditions throughout the Dominion are still relatively bad and the paper manufacturer does not expect to sell more paper until business houses begin to buy more stationery, booklets, direct advertising pieces, envelopes and account forms which are moving slowly just now.

On the other hand, the sales manager of one of the largest Ontario fine paper mills is authority for the statement that his organization booked some nice business in the line of book and offset papers during the past three weeks, some of this business coming from Quebec and some from Ontario, while some enquiries have been coming in from the Canadian West. It was acknowledged, however, that this may have been a flash in the pan and that there might yet be a return to the spotty conditions that have prevailed during the present year.

Most of the fine paper mills are not getting the business they had expected at this season of the year and the coarse paper market is decidedly dull, with light demand for both wrappings and paper bags. Under restricted demand from the paper box industry the board mills are operating lightly, although there has been a slight improvement in the corrugated board and box manufacturing trade. Some box factories are busy turning out papeteries for the coming Christmas trade.

Backus Named in Timber License Suit

Declaration that Great Lakes Paper Company, Ltd., is the owner, subject to a mortgage, of an undivided one-half interest in a timber license granted by the Ontario Government on November 6, 1928, and known as the Kashabowie License, and in personal property appertaining to the limits covered by the license, is asked by a writ issued at Osgoode Hall by the National Trust Company, as receiver and manager of Great Lakes Paper Company, against E. W. Backus, Minneapolis; Superior Timber Company, Ltd., Port Arthur; Pigeon Timber Company, Port Arthur; Kenora Development Company, Kenora; E. E. Johnson, Port Arthur; Ben Judd and Anne M. Alexander, H. J. Hagge and Frank Welter, Wausau, Wis.; Brown Katzenbach, Chicago, and Seymour W. Backus, Minneapolis. The plaintiff also claims possession of 560 shares of stock of the Pigeon Timber Company, and 250 shares of stock of Superior Timber Company.

The trust company asks a declaration that the purported sale by Great Lakes Paper Company to E. W. Backus of a one-half interest in the Stewart Kashabowie license and of the 560 shares of stock of Pigeon Timber Company, and the purchase by Great Lakes Paper Company from Mr. Backus of certain shares of International Paper Company, and of Mississaga Power Company on the Mississaga properties were and are null and void.

The plaintiff company asks an order requiring E. W. Backus to deliver up to the company the 560 shares of Pigeon Timber Company stock, and an injunction restraining Mr. Backus and the other defendants, other than Mr. Johnson, from dealing with the shares. The trust company asks appointment of a receiver of the half interest in the Stewart Kashabowie license and property pertaining thereto and authority for him to enter into agreements for cutting of timber in 1933 on the limits covered by the license.

George R. Gray's Estate

The will of the late George R. Gray, Sault Ste. Marie, financier and official of the Abitibi Power and Paper Company, and the old Spanish River Pulp and Paper Mills, has been entered for probate and reveals an estate worth $796,256. Practically all of the money was left to fourteen relatives. Under the will the widow is left $381,318. Succession duties amount to $170,000. Children of the late Joseph Gray, a brother, Joseph, Howard, Gordon, Keith, and Mrs. Lillian Cairns, all of Toronto, are each left $1,000, while $30,000 is evenly divided among Ethel, Beatrice, and Katharine Gray, sisters of the financier, also of Toronto. The three sisters also get a quarter interest in a house at Coldwater, and Albert Gray a fourth interest. The remainder of the estate is divided into equal shares of $41,504 each and is distributed among relatives. The major part of the estate, or $762,152, was in stocks and bonds.

Notes and Jottings of the Trade

Strenuous efforts are being made in Japan for the establishment of forests, and reforestation schemes are well under way to rehabilitate treeless territories in Korea. Information to this effect has recently been received at Vancouver, B. C., by the Canadian Forestry Association. It is stated that while China has left all initiative in the conservation of forest resources to the private individual, Japan has long since developed an up-to-date and effective method of handling the situation.

E. L. McColl, Canadian Trade Commissioner at Havana, Cuba, states that approximately 100 long tons of sulphite paper are imported annually into that country. The largest part of this is cut up and printed locally for the use of fruit packers. It is imported principally from the United States, and Mr. McColl would like to investigate the possibilities of this market on behalf of Canadian manufacturers. He has asked for samples from Canadian firms interested.

Sonoco Products, Ltd., of Hartsville, N. C., has announced through its president, J. L. Coker, that it will shortly start operations in the old Niagara Silk Company building, in Brantford, Ont., where machinery is now being installed. The company will make a complete line of paper specialties for use in the textile industry.

W. H. Sherriff has arrived in Toronto from England and has taken over the management of the Toronto office of the Hodge-Sherriff Paper Company, who are selling agents for Wayagamack kraft lines. Mr. Sherriff was associated with the company for some years prior to seven years ago when he was transferred to the London, England, branch of the company. He stated that when he left England business generally over there gave signs of picking up.

C. F. Mansell, whose death occurred recently in Toronto, left an estate valued at over $49,000 accumulated during a life-time in the paper business. Mr. Mansell was in charge of the old Toronto Paper Company for many years and of recent years was with the Howard Smith Paper Mills of Toronto.

Ellis H. Baker is under arrest in Toronto charged with the theft of about $3,000 from J. H. Hook, of the Whyte-Hooke Paper Company, in that city, for which firm he worked as a bookkeeper.

"New Findings and Aids by the Papermaker" was the subject of an address given by Robert A. Rawsthorn, of the Toronto office of the Valleyfield Coated Paper Mills, at a meeting of the Toronto Club of Printing House Craftsmen, which was attended by a good representation of the Toronto wholesale paper trade.

Boston Paper Market Quiet

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., April 3, 1933—The wholesale paper market was generally quiet in and around the Hub last week, although a cheerful sentiment prevailed. Here and there a slight improvement developed in the fine paper trade, in which conditions as a whole were practically unchanged. The tendency of fine papers to advance continues. The time limit remains on the prices of those book papers which have not been withdrawn. The expectation is that those who have withdrawn prices will mark them up. Business in wrapping paper is reported slow, although dealers are hopeful. Numerous small orders were received for box coverings. Box board activity in material for jigsaw puzzles and their containers persists, with values steady.

The general situation in paper stock was the same as in the previous week. Some lines were considerably sought after and others were nearly inactive. Old papers are stiffening in value, with some grades actually marked up. White blank news rose to 1.00 @ 1.05 compared with a former range of .90 @ .95, and No. 1 mixed papers to .17½ @ .22½, compared with .15 @ .17½. Burlap showed a strengthening tendency. In the old domestic rags roofing stock is very strong at present levels and all are hopeful that an advance in prices will take place. No. 1 roofing stock is quotable at .40 @ .45, No. 2 at .35 @ .40, and No. 3 at .25 @ .30.

Twine dealers are watching the progress of the Smith bill at Washington to see if the price of cotton will be advanced.

Gets Large Cargo of Swedish Pulp

ALBANY, N. Y., April 3, 1933—A vessel carrying several thousand tons of wood pulp from Sweden arrived here this week and is now being unloaded. It is understood that the shipment is for the Union Bag and Paper Corporation which has received large quantities of the foreign product for its Hudson Falls plant in the past few years. All previous records for foreign importations have been surpassed this winter at the local port because of the open navigation weather and plans are now under way for extending facilities.

Obituary

William H. Gehbauer

SPRINGFIELD, Mass., March 31, 1933.—William H. Gehbauer, of 83 South Bouvlevard, West Springfield, well-known resident of the town for the past 45 years and identified for 35 years with the Mittineague mill of the Strathmore Paper Company as an official, died March 23, in Springfield Hospital after a long illness, aged 57.

Mr. Gehbauer was superintendent of the rag department of the Strathmore plant in Mittineague and had but recently returned to his work for a short time. With Mrs. Alice E. Gehbauer, he was preparing to celebrate his 25th wedding anniversary on March 25.

He was born in Westiconic, N. Y., and came to West Springfield 45 years ago. He was a member of Mt. Orthodox Lodge of Masons and Tekoa Lodge of Odd Fellows and was an active member of the Mittineague Congregational Church.

He leaves besides his wife, two daughters, Anna Mae and Mrs. Catherine A. Gilligan, both of West Springfield; four stepsons, George Craven, of Philadelphia; Thomas Craven, of West Springfield; William Craven, of Springfield and Raymond Craven, of Palmer; three sisters, Mrs. Francis Shattuck, of West Springfield; Anna Gehbauer, of Mellenville, N. Y., and Christine Gehbauer, of Yonkers; three brothers, Fred, Charles and Harry, of Philadelphia, Long Island and Troy, N. Y., respectively, and eight grandchildren.

Frederick Heber Keep

BOSTON, Mass., April 3, 1933.—Frederick Heber Keep, a director and treasurer of W. H. Claflin & Co., Inc., died April 1. Mr. Keep started in the paper business for himself in Lowell, Mass., in early life. He afterwards became salesman for A. L. Tribble, of Boston, and in 1892 was associated with W. H. Claflin & Co. This firm was incorporated and Mr. Keep later became treasurer and director. A thorough gentleman, Mr. Keep was highly respected and held in warm regard by all. Mr. Keep was a member of the Boston Chamber of Commerce and of the Boston Paper Trade Association. His home was at 4 Webster Road, Milton, but during the winter he lived in Boston. A wife, Mrs. Alice Leavitt Keep, survives him. A brother, Henry A. Keep, of the Fort Hill Paper Company, died a few years ago.

William B. Dillon

EAST ORANGE, N. J., April 1, 1933.—William B. Dillon, former New York paper dealer, died yesterday at his home here, 253 Harrison street. Mr. Dillon retired six years ago from the firm of Dillon & Barnes, of New York. He formerly was vice-president of the International Paper Company and at one time served as general manager of the Great Northern Paper Company.

He was a member of the Union League Club of New York and was a Mason. Mr. Dillon is survived by his widow and two sisters, Miss Julia Dillon and Mrs. Alice Wirgman, all of East Orange.

Delaware Valley TAPPI to Meet

A joint meeting of the Delaware Valley Section of the Technical Association of the Pulp and Paper Industry and the Pennsylvania-New Jersey Division of the Superintendents Association and the Philadelphia Section of the Typothetae will be held at the Benjamin Franklin Hotel, April 22, 1933. Papers on printing properties of paper, management methods, and paper manufacture will feature the meeting.

Philadelphia Paper Market Continues Active

Distributors Report Slight Betterment in Actual Purchasing of Standard Grades of Paper, and More Stable Quotations—Prospective Consumption of Beer Brings Volume of Inquiries and Stimulates Demand—Hand-to-Mouth Buying Declines

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., April 3, 1933.—March closed with the week's business experience but slightly improved over the preceding, but markedly so over the first week of the month. All the jobbers report greatly improved stability in the matter of prices, a slight betterment of actual buying and considerable volume of inquiries, and particularly during the last few days of the week a stimulus in demands from a few of the lithographic concerns in the city—and more from the larger printers—contributable to the preparations for the prospective flow of beer in the next few days. Bottlers have been almost entirely out of the market for labels, have sent in rush orders to the lithographing houses and to the printers, and this, of course, immediately was passed on to the paper distributors. It is expected that this impetus will continue for some time, and, though in itself not a dominant feature in the market, is an appreciable one.

But the most satisfying feature of the week was the decline of hand-to-mouth buying, particularly by the smaller printing concerns, which for months has been so unsatisfactory and costly. Many of the houses realize that this class of business has been conducted with virtually no profit, often at a loss, but that it could not be declined for fear of losing potent customers when the better days come.

The 10 per cent increase in sulphite, passed along to the printers, has met with virtually no opposition on their part but actually with considerable satisfaction because of its stabilizing effect, and it has given encouragement to some slight increase of buying because of the engendered confidence that it pays to buy now, and will be costly to postpone. Of course, no printer is in a position to anticipate future business to any large extent because all of them report credit collections in such bad shape that they are not in a position to tie up their capital for the sake of available discounts or to make commitments for the future. With no complaints then over the developments of the week, the jobbers—to a man—are turning their faces to the future.

Unfair Trade Customs

Of direct concern to the local trade is the progress of the movement in which the Paper Trade Association of Philadelphia and the Typothetae jointly and most harmoniously are interested—to eliminate under the guidance of the Federal Trade Commission unfair trade customs from which all have suffered. Certain aspects of the situation have been called to the attention of the Commission, and there has been a considerable exchange of correspondence with the prospect that, particularly in view of recent developments, much can be done to eliminate these abuses.

In this connection, attention has again been called by the Typothetae to the opinion handed down in Appalachian Coals, Inc. et al. vs. United States of America, in which the Supreme Court of the United States reversed the decree of the District. Appalachian Coals, Inc., was organized for control of production, distribution and prices, and the Supreme Court in its review of the case found no evidence of criminal intent but on the contrary an honest effort to rescue the industry from its "serious plight."

The Paper Trade Association of Philadelphia and the Typothetae are jointly hopeful that at an early date it will be possible to secure a hearing by the Federal Trade Commission, which thus far, it is understood, has held 129 trade practice conferences. Attention is being called to a recent communication in which the Commission says: "Self regulation without rules would be impossible and rules without power of enforcement make self regulation a futile gesture. The fact that power rests in an impartial disinterested governmental body obviates the necessity of its frequent use. This is demonstrated in the fact that approximately seventeen hundred rules have been adopted in trade practice conferences, but the power of the Federal Trade Commission has not been invoked in a dozen instances." Facts are being secured in the hope that at an early date it may be possible to formulate a program to be laid before the Commission.

Book Stock in Good Request

The paper stock trade reports as the outstanding features of the week a steady continuance of the improved demand for book stock and a marked increase of inquiries for kraft stock. Without exception the stock men report an easy ability to dispose of all their offerings, but, unfortunately, only at a price—and that price so low as to leave no margin of profit. Those who have placed offerings before mills have already received the reply: "Yes, we are in the market to take your offer but at the prices which have prevailed since the first of the year." The stock men have a belief —almost amounting to a conviction—that there is a complete understanding among the mills on this matter of prices, but, of course, they are unable to do anything. And because of present day conditions are not in position to hold stock in order to secure an advance. The margin of profit is so small that an attempt to store stock not only would wipe it out but would mean an actual loss. Those who were hopeful that the spurt in demand occasioned by the jig saw puzzle craze would improve prices are now of opinion that the only beneficial effect was to prevent a further slump, and none of them report ability to secure orders at even the slightest increase.

News of the Trade

Frank Dubin, Nathan Isen, Ben Kessler, Charles Resnick and Arthur J. Lewis, of the Paper and Bag Institute of Philadelphia, held an informal luncheon meeting at the Girard Cafe during the week and discussed the matter of stabilizing prices on the slightly higher levels of March. There unquestionably is closer cooperation in the coarse paper trade than has maintained for years.

Moore & White has installed one of its single revolving cutters with 136 inch knife, in the Mead Corporation plant at Kingsport, Tennessee.

J. J. Brossard, vice-president of the Container Corporation, Chicago, visited Philadelphia this week.

Jardus Heads Universal Paper Co.

FITCHBURG, Mass., April 3, 1933—Edward Jardus is proprietor of the Universal Paper Company, 133 Main street, recently organized to operate as a wholesale paper jobbing house. The concern is to carry wrapping paper, bags, twines and allied lines of paper specialties.

Studies of Pulp and Paper Mill Wastes

Made During 1932 by the Bureau of Sanitary Engineering, Wisconsin State Board of Health With the Cooperation of the Wisconsin Pulp and Paper Industry

By J. M. Holderby[1]

Public interest in the conservation and restoration of natural recreational facilities has grown hand in hand with an appreciation of their relation to the public health, welfare and comfort. Important among such facilities are lakes and streams and accordingly the pollution of streams by domestic and industrial wastes has been receiving increasing attention by governmental agencies and by those responsible for such pollution.

Since 1925 the Wisconsin State Board of Health has been carrying on a program to reduce pollution caused by sewage and industrial wastes. Activities relative to this program have for the most part been with the cooperation of the industries affected and in the main have included (a) the determination of the pollutional character of wastes from the state's larger industries, (b) research on and investigation of economically feasible ways and means of utilizing and of reducing the volume and strength of these wastes, and (c) educational and promotional measures to voluntarily secure indicated improvements.

Wastes from pulp and paper mills occasion one of the major problems in Wisconsin, from the stream pollution point of view, and as such have received much attention in connection with the above program. Studies to obtain data for determining the fiber content and the pollutional value of wastes from each mill and for evaluating improvements in mill equipment and operation have been carried out in 1926, 1929, 1931, and again in 1932. Results of the 1926 and the 1929 studies have been published.[2] [3] The 1931 studies have been reported to the individual mills and the 1932 studies are reported below.

1932 Studies

In general the 1932 studies were carried out as in previous years. The data collected has been summarized and individual reports have been prepared for each mill. In the individual reports the mill layouts are described, the analytical and flow data for the mill is presented and discussed, and in most cases specific recommendations are offered.

Field Procedure

Prior to starting the field work, arrangements were made for establishing base laboratories to serve as field headquarters and in which to carry out such analytical work as was necessary in the field. Arrangement was made with the State Laboratory of Hygiene to furnish field laboratory equipment and to make complete analyses of all samples collected.

A detailed inspection was made at each mill included in the survey. Conferences were held with officials at which time the previous surveys were considered and details of mill operation were discussed. Next, a complete tour of the premises was made, sewers were located and plans laid for the measurement of waste flows and the collection of composite samples. Weirs were used in most of the sewers for discharge measurements. The flows in the remainder of the sewers, those inaccessible or unsuitable for weir installations, were either determined by means of a Pitot tube or were estimated by the mill technical staff. Weirs where used were constructed by the mill staff and arrangements were made for a mill employe to take readings and to collect samples on a designated day. Samples were collected at intervals of from fifteen minutes to one hour and over periods of from six to twenty-four hours.

Analytical Procedure

The composite samples were collected and either were taken to the field laboratory for preliminary examination or were shipped direct to the State Laboratory. Field determinations were made for pH and 5 day biochemical oxygen demand. At the State Laboratory, suspended and soluble solids, both fixed and volatile; total solids and oxygen consumed values were determined. Suspended solids were obtained using alundum crucibles. Colorimetric methods were used for pH. Oxygen consumed and 5 day biochemical oxygen demand determinations were made essentially in accord with the standard methods of the American Public Health Association.

For the interpretation of the analytical results obtained, it is considered that the fixed suspended solids represent, in the case of paper mill effluents, clay, filler, etc. Fiber is represented by volatile suspended solids. Soluble solids represent dissolved size, alum, starch, lignin, and other wood materials together with those substances originally present in the carrying water. The oxygen consumed and the 5 day biochemical oxygen demand values are, as their names indicate, measures of the quantities of oxygen dissolved in streams necessary to stabilize the putrescible organic matter in the wastes.

Results

Observed and calculated data for each mill are given in detail in the individual reports. Data for the whole group of mills are summarized in Table I appended to this report. In this table are shown such data as will permit a direct comparison between mills in the various classifications together with a financial loss index for each mill. This index, which represents the value of the fiber lost through the sewers, is directly dependent upon the volume of production and does not, therefore, indicate relative efficiencies.

The values of fiber lost to the sewers were assumed for the purpose of comparison to be the same as were used in previous reports. These values are given in Table II.

TABLE II
VALUE OF MATERIAL SALVAGED FROM WHITEWATER

Classification of Mill	Value of Lost Fiber Per Ton
Book, wrapping, tissue and sulphite bond papers	$40.00
News and unclassified	25.00
Rag content bonds	60.00
Straw and paper board	20.00
Sulphite and kraft pulp	40.00
Ground wood pulp	15.00

It is realized that under prevailing market conditions the above values are somewhat high. To arrive at the true value of their sewer loss each mill should revise their reported index to fit their own costs.

[1] Asst. Sanitary Engineer, Wisconsin State Board of Health.
[2] Stream Pollution in Wisconsin, Special Report, Wis. State Board of Health, 1927.
[3] L. F. Warrick & K. M. Watson, Paper Trade Journal, June 12, 1930.

The population equivalents of the mill wastes indicate the number of persons who by the production of domestic sewage would exert an oxygen demand on the stream equivalent to that of the wastes from the manufacture of one bone dry ton of the mill product. These equivalents are based upon the commonly accepted assumption that one person will in one day produce sewage with a 5 day oxygen demand of 0.167 lbs.

Discussion of Results

A tabulation of certain of the data from the 1929, 1931, and 1932 studies is given in Table III. In this table only those mills were considered for which three years of fairly comparable data were available; thus in each classification data for identical mills from three consecutive studies are presented.

A study of Table III indicates in general that waste flows, fiber losses and population equivalents per ton as well as financial indices were definitely higher in 1931 than in 1929, and that these same values were materially decreased in 1932. These trends are best brought out by the average values for the paper mill classification and for the group as a whole. In the smaller classification the averages are apt to be misleading because of the unduly large influence of individual values upon the mean.

In comparing the individual mill layouts as noted from year to year the conclusion is inescapable that steady improvement has been made as regards provisions for white water recirculation and the installation for fiber saving devices despite the analytical results reported for the 1931 studies. Several possible explanations may be advanced for this apparent inconsistency. Market conditions were such in 1931 that many mills were being forced to operate on short paper orders, and as a result white-water systems which were designed to function efficiently for more or less continuous paper runs were not producing as efficient results as normally obtainable. Furthermore, having the experience of the previous studies to draw upon, more sewers were located and sampled in 1931 at a number of the mills than before.

By 1932 many of the white water systems had been revamped to meet the conditions imposed by the short paper runs and sewer losses were in general again reduced; the reductions noticed being in many cases to values below those reported for 1929.

It is a matter of observation that there has been steadily increasing activity in Wisconsin mills along the line of waste elimination. It is believed that this is due to a growing appreciation of the feasibility of white water recirculation and of the practical economy of minimizing sewer losses.

A study of the mill results given in Tables I and III shows considerable variation in unit values obtained in some cases; especially noticeable in the "Sulphite Pulp" and the "Sulphite Pulp & Paper" classifications. Such variations are undoubtedly due not only to differences in equipment or manufacturing conditions between mills, but

TABLE III.—PULP AND PAPER MILL WASTE STUDIES—COMPARISON OF RESULTS—1929, 1931, AND 1932

From Identical Mills

No. of Mills	Waste Flow M. Gallons Per Ton of Product			Per Cent Loss			Population Equivalent Persons Per Ton of Product			Financial Loss Index		
	1929	1931	1932	1929	1931	1932	1929	1931	1932	1929	1931	1932
* Paper Mills												
1	84.5	116.7	100.2	4.4	6.3	2.6	0.0	79.0	26.9	33.44	47.80	19.84
2	18.7	21.1	29.9	4.0	3.5	6.0	42.0	13.2	26.9	157.40	133.60	229.93
3	40.5	102.0	102.0	1.4	2.7	2.7	38.2	116.8	36.7	17.14	31.60	35.84
4	10.2	59.1	13.4	0.1	1.4	0.8	7.2	24.6	9.0	1.54	15.80	9.06
5	52.7	82.9	69.8	1.8	5.3	9.5	52.7	59.9	100.9	41.96	69.60	125.80
6	1.3	1.3	1.3	0.1	0.01	0.02	0.2	0.9	0.5	7.00	0.73	1.09
7	11.3	13.3	8.7	0.5	0.6	0.5	6.3	3.6	3.1	12.65	22.80	17.62
8	100.0	53.4	85.1	5.8	4.3	2.2	28.1	5.4	35.7	39.04	29.20	14.79
9	27.6	17.9	19.5	3.0	2.6	2.2	32.3	51.5	29.2	148.60	129.20	108.97
10	12.0	10.9	8.8	1.6	2.3	0.9	23.4	7.2	6.3	51.20	68.80	30.00
11	33.7	64.7	60.5	0.3	6.7	5.9	37.1	58.1	155.5	2.92	48.40	44.61
12	20.0	39.2	35.9	3.2	3.0	2.1	12.0	18.6	6.6	12.72	12.00	8.46
13	23.4	33.2	4.3	1.6	2.1	0.3	13.8	41.3	3.1	50.88	88.40	14.14
14	31.9	19.6	8.5	7.2	3.9	1.3	19.2	50.9	21.9	175.20	109.60	32.36
15	31.4	23.4	23.6	1.5	1.4	0.8	28.2	9.6	7.2	5.83	5.50	3.17
16	23.5	25.9	30.0	2.5	10.5	5.1	10.8	38.9	50.3	8.20	34.00	16.41
17	50.3	35.7	22.7	5.0	4.2	1.5	37.8	48.5	17.2	62.40	53.60	18.88
Average...	33.7	42.4	36.7	2.6	3.6	2.6	22.9	36.9	31.6	48.71	52.98	43.00
* Sulphite Pulp and Paper Mills												
1	83.0	89.5	103.0	5.0	18.7	6.6	....	1076.6	1520.0	89.28	356.40	125.88
2	84.0	100.3	122.0	5.0	5.6	2.2	349.0	2219.2	970.0	210.00	207.00	80.65
3	160.0	231.4	178.7	9.6	18.5	13.4	1500.0	3146.1	2680.0	207.36	252.00	182.31
Average...	109.0	140.4	134.6	6.5	14.3	7.4	925.0	2147.3	1723.3	168.88	271.80	129.61
* Ground Wood Pulp and Paper Mills												
1	12.4	25.6	22.5	1.8	2.5	2.6	16.8	19.2	31.2	59.80	75.25	79.50
2	30.3	19.8	15.5	3.7	3.9	4.1	9.6	15.0	17.7	27.20	29.00	30.97
3	12.5	12.4	12.0	2.5	2.6	2.3	21.6	16.8	29.7	51.00	54.00	48.55
Average...	18.4	19.3	16.7	2.7	3.0	3.0	16.0	17.0	26.2	46.00	52.75	53.01
* Kraft Pulp and Paper Mills												
1	34.1	165.7	205.0	1.6	7.8	7.0	113.4	704.8	584.0	57.60	290.80	260.21
2	41.9	91.7	128.7	1.5	2.7	4.2	68.3	149.1	28.4	66.35	116.00	178.08
3	141.0	67.4	66.4	6.5	5.6	2.7	798.0	379.0	165.0	109.20	167.60	81.75
Average...	72.3	108.3	133.4	3.2	5.4	4.6	326.6	410.9	259.1	77.72	191.47	173.33
** Sulphite Pulp Mills												
1	52.0	71.5	70.4	1.8	2.5	6.5	1164.0	1382.0	1468.0	64.60	68.80	175.23
2	38.4	35.9	36.0	2.8	1.8	1.4	1146.0	1255.0	1157.0	89.40	57.20	44.87
3	52.0	49.1	48.0	4.2	11.2	1.1	960.0	2772.0	1480.0	143.76	384.00	38.87
4	67.0	117.8	59.2	3.5	17.8	2.3	429.0	6763.0	1483.0	126.52	642.40	82.08
5	28.8	46.9	25.4	1.8	12.3	1.7	178.0	3966.0	490.0	28.20	160.00	22.40
6	213.0	225.6	161.0	11.2	25.4	3.9	846.0	2057.0	698.0	107.52	243.20	37.68
Average...	75.2	91.1	66.7	4.2	11.8	2.8	787.0	3033.0	1129.0	93.33	259.27	66.86
** Ground Wood Pulp Mills												
1	11.0	7.1	23.4	3.1	1.7	8.1	61.2	6.6	79.1	29.19	16.10	76.59
2	20.1	27.0	22.8	4.2	1.5	2.5	18.0	32.3	40.8	22.80	8.25	13.36
Average...	15.6	17.1	23.1	3.7	1.6	5.3	39.6	19.5	60.0	26.00	12.18	44.98
** Kraft Pulp Mills												
1	44.0	70.6	97.1	0.7	1.9	2.4	83.0	124.6	22.5	20.16	90.80	117.61
2	100.0	49.8	37.7	1.9	2.7	0.7	2628.0	82.6	20.3	22.24	29.60	7.56
3	84.0	48.0	48.0	9.2	4.3	1.8	387.0	51.5	129.2	351.36	152.80	66.42
Average...	76.0	56.1	60.9	3.9	3.0	1.6	1033.0	86.2	57.3	131.25	91.07	62.86
* Miscellaneous												
1	29.0	27.9	27.8	5.4	5.1	4.1	84.0	259.9	102.0	142.00	126.00	100.56
2	29.2	14.5	25.2	1.4	2.8	4.0	83.4	9.6	47.4	49.40	78.80	111.95
3	106.0	134.4	142.5	16.6	10.5	9.1	384.0	731.7	279.6	466.74	309.00	258.00
Grand Average												
40	51.2	61.3	56.1	3.7	5.8	3.5	292.9	696.2	351.5	84.22	120.39	73.80

* Based on average paper production. ** Based on average pulp production.

also to the difficulty in securing truly representative samples in the limited periods for sample collection, to the often necessary lack of refinement in the devices for estimating flows and to the normal daily fluctuations in mill operation. It is believed, however, that as indicators of progress in waste elimination the averages of the larger classifications and the averages of the group as a whole have considerable significance.

It has been pointed out in many of the individual reports and it is worth repeating here that in order to effectively control stock losses in any mill it is imperative that frequent determinations be made of the volume and the fiber content of all process wastes. To this end weirs or other measuring devices should be installed in all sewers and equipment should be provided for sampling and determining the fiber content of wastes. Such provisions do not ordinarily entail any considerable financial outlay nor do the procedures necessarily demand techincal personnel.

Stream pollution from kraft pulp mills has been materially reduced during the last few years. By continually increasing the efficiency of their chemical recovery plants, several mills of this type have reduced the oxygen demand of their wastes until at present their population equivalents are little, if any, larger than the average paper mill.

Although progress is being made in the development of at least one process for utilizing spent liquor from sulphite mills and thereby materially reducing their importance as producers of pollutional wastes, present economic conditions have delayed the construction of any full scale treatment units.

The successful application of recirculation to effect a "closed" whitewater system and thereby avoid loss of manufacturing materials to the sewer is often dependent upon controlling slime growths within the system itself. In recent years it has been demonstrated conclusively that such growths can usually be economically controlled by the use of the chlorine-ammonia process. Indeed the employment of the process has made possible a great deal of the recent progress noted.

In conclusion it is evident from these and previous studies that the Wisconsin Pulp and Paper Industry as a whole has been making definite progress toward minimizing sewer losses of all kinds. The minimum, however, has not been reached except in a very few instances and there is, therefore, need for further extensive improvements. It is believed that the future of the Industry in Wisconsin depends to a considerable extent upon the elimination of waste in manufacture and it will therefore, be of benefit to all concerned to reduce mill losses and the accompanying stream pollution to a minimum.

Respectfully submitted,

J. M. HOLDERBY, *Assistant Sanitary Engineer,*
State Board of Health.

L. F. WARRICK, State Sanitary Engineer
Approved January 25, 1933

American Writing Shows Loss

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., April 4, 1933—Sidney L. Willson, President of the American Writing Paper Company, Inc., has made public figures for the past year ending Dec. 31, 1932, showing an operating profit of $19,635, but a net loss of $646,444.

The last of an issue of $1,000,000 in serial notes and $175,000 in another series was paid off and $213,868 set aside for depreciation; and the cost of carrying unoperated mills was figured at $138,021. The sum of $316,161 was paid for interest on bonds and serial notes. The serial note obligations have all been liquidated.

Union Bag Financial Report

[FROM OUR REGULAR CORRESPONDENT]

HUDSON FALLS, N. Y., April 3, 1933—The annual financial report of the Union Bag and Paper Corporation shows a deficit of $259,392.41 for the year. Net sales amounted to a total of $6,422,043.23 while the cost of manufacturing expenses and products including $98,585 for depreciation was $5,263,266.28. Profits from manufacturing amounted to $1,158,776.95 while deliveries, selling, administrative and general expenses reached a total of $1,319,680.86, leaving a balance of $160,893.91. Incomes from interest was $23,576.21 and profit on the sale of government securities $4,087.50, forming a total of $27,663.71 and leaving a loss before extraordinary charges of $133,230.20. Provision for loss sustained by the controlled company was placed at $15,162.24 and the reduction of inventories to approximate market values was $11,000, combining a total of $126,162.21 and thereby showing a loss of $259,392.41 for the year. The report also states that the net loss for 1930 and 1931 amounted to $42,699.29.

A statement issued by officials to stockholders indicates that the working capital of the company is satisfactory. There are no bonds, preferred stock or bank debts and the only liabilities are the comparatively small amounts not due to be paid on the date of the balance sheet. The statement also sets forth that the volume of bag sales for 1932 was approximately the same as in 1931 although the industry in general experienced a substantial loss in volume. Competition was cited as the principal reason for bringing approximately eighteen per cent less for the products during the past year which resulted in a reduction of over $1,000,000 in income.

It also reveals that the major part of the loss in gross revenue was recovered through reductions in cost of raw materials, lower wages, administration and increased efficiency in various departments so that the loss after depreciation and a write down of $110,000 on inventories amounted to $259,392.41. Inventories are shown as $500,000 above normal because the company deliberately anticipated its requirements of pulp and paper in order to secure the benefit of lower freight rates by taking delivery before the close of navigation, resulting in a material saving. It concludes by announcing that a final settlement was made with the Federal government during the year for all taxes up to date, only a small portion of the reserved fund for taxes and contingencies being required which incidentally left a balance of $212,893.79 for any emergency.

Better Prospects for New York Mills

FORT EDWARD, N. Y., April 3, 1933—Dispensing with restrictions on beer by the government has stimulated business here and the International Paper Company has just completed its initial order for super-calendar paper to a jobbing concern in New York City. Shipment was made this week and it was learned that the order is to be used for beer bottle labels. Other orders are expected to follow and plans for increasing production are under way.

Increased schedules became effective this week at the Corinth branch of the company where part time schedules have been observed. The plant is now running five days a week and most of its employes have been recalled.

Plans are said to be under way for alterations at the Piercefield mill which will allow the production of high quality sulphite bond paper and business interests in that village have welcomed the resumption of operations. Rumors of a permanent closing of the mill have been dispelled and about 75 hands have returned to work. It is possible that the equipment may be revamped in the changing over to the new product.

Comments on "A Study of Physical Properties of Binders Board"

1321 Euclid St., Washington, D. C., March 20, 1933.
Editor, PAPER TRADE JOURNAL:

The following comments are offered on the article of B. W. Scribner and L. W. Snyder "A Study of Physical Properties of Binders Board", published in the October 20, 1932 issue of PAPER TRADE JOURNAL. These comments are made for the purpose of correcting conclusions which were drawn as a result of testing specimens too small to be representative of the boards from which they were cut. The text of the article deals principally with methods of testing but the conclusions drawn are not supported by the test data given. The data given in the article are the results of tests on 34 samples of binders board submitted by seven manufacturers. My comments are based on data collected over a period of three or more years as well as on the data included in the report. My data includes tests on a somewhat similar set of samples in January, 1930, tests in April, 1931 on a duplicate set of the samples tested by Scribner and Snyder, and tests on a considerable number of samples of binders board obtained at various times from binderies in different sections of the country.

I believe that the test procedure of Scribner and Snyder is too strict in some respects and not strict enough in others. For weight and thickness determinations they used four test specimens, each 5 x 5 inches, measured to an accuracy of 0.01 inch. Due to the present methods of manufacturing binders board the thickness of the different sheets in a bundle varies, and considerable variations are often found in the individual sheets. It is my opinion that 5 x 5 inch specimens are entirely too small to show marked variations in the individual sheets of binders board. That size represents only 3 per cent of the area of a standard 26 x 32 inch sheet. A 10 x 10 inch specimen represents 12 per cent of the area of the same standard size board, and is therefore more representative of the entire area. To check more accurately the variations in thickness in the individual boards the test specimens should be cut 10 x 10 inches. This size is the one most generally used in cutting test specimens. The Binders Board Manufacturers Association approved the use of this size in their "Specifications for Binders Board", adopted in 1931.

The following statement is quoted from the article in question. "The average thickness of the different boards comprising a sample was found to be quite uniform, the variation usually falling well within plus or minus 5 per cent and the individual measurements of thickness usually not varying more than plus or minus 0.003 inch. These variations are within the requirements for the cover making machines." This statement is open to question because their conclusions are based upon test specimens that were too small to be representative of the boards from which they were cut. If the method used for manufacturing binders board were more precise the finished boards would be more uniform in thickness. However, under the present operating conditions strict uniformity is lacking, even in the individual sheets. Test specimens cut large enough to be representative of the boards from which they are cut show this to be true. Furthermore a 5 per cent plus or minus tolerance in thickness is not satisfactory on cover or casemaking machines for boards of certain thicknesses. With this tolerance limit, boards of the standard thickness of 0.098 inch could vary between the limits 0.0931 and 0.1029 inches, a total variation of 0.098 inch, and still meet the requirements for thickness. Experience with casemaking machines shows that this variation is too large for satisfactory operation. The tolerance should be uniform for boards of all thicknesses and therefore cannot be expressed in percentage thickness. The individual thickness determinations on boards of any thickness should not vary more than plus or minus 0.003 inch from the standard thickness to give the best operating conditions on the automatic casemaking machines.

The quotation cited above gives the impression that boards of different manufacture are uniform in thickness in respect to each other, especially when it is considered in connection with their statement, "These data appear to show sufficient uniformity for the use to which the board is to be put." Reference to Table I of their data shows that five standard thicknesses, represented by the groups, A, B, C, D, and E, were tested. The article shows that boards manufactured by seven firms are represented in the five groups. This infers a comparison of the boards of the different manufacturers in each of the standard thicknesses tested.

The Binders Board Manufacturers Association in their specifications for binders board approved a tolerance of 0.003 inch plus or minus for individual measurements in each of the standard thicknesses. If we apply the same tolerance to the standard thicknesses tested by Scribner and Snyder the following facts are developed. In Group A, standard thickness 0.058 inch, three of the six samples fail to conform to the requirements for thickness. The minimum thickness of the individual samples in this group is 0.054 inch, the maximum 0.065 inch. The figures for thickness in each of the five groups of Table I are average figures derived from individual thickness determinations on the four test specimens making up each sample. Therefore the figures cited do not show the full extent of the deviation from the accepted tolerance. In Group B, standard thickness 0.070 inch, three of the seven samples fail to meet the requirements for thickness. In Group C, standard thickness 0.080 inch, two of the seven samples are outside the tolerance limits. The maximum thickness of this group would be 0.083 inch for any individual measurement. One of the samples outside the tolerance limit averaged 0.0917 inch, the other 0.0974. In Group D, standard thickness 0.088 inch, five of the seven samples fail to meet the requirement for thickness. In Group E, standard thickness 0.098 inch, five of the seven samples are not within the tolerance limits. To summarize; there are 34 samples represented in the five groups. Eighteen of these samples, or 53 per cent, fail to meet the accepted tolerance limits of thickness for their respective groups even when the tolerance is applied to the average thickness of the sample instead of to the individual thickness determinations as required in the manufacturer's specifications. With less than 50 per cent of the samples tested meeting a liberal interpretation of the tolerance requirements for thickness the statements quoted regarding uniformity of thickness are hardly justified.

The conclusions of Scribner and Snyder on thickness data are compared with the tolerances permitted by the

Binders Board Manufacturers Association because their article states, "The Binders Board Manufacturers Association adopted specifications of quality for binders board based on the data obtained in this study."

The statement is made in the article that "The superior uniformity of the data obtained by the flexural test is apparent, and this, in conjunction with its similarity to service stresses, recommends its use for testing this material." This statement is based upon the graph in Fig. 7 of their article. The graph was designed to show variations between the bursting strength tests and the flexural strength tests. These particular tests on the boards of one manufacturer were plotted against the average figures for the same tests for the five groups. No direct comparisons were drawn between the tests on boards of different manufacturers. However, the statement quoted includes all their flexural strength tests.

The writer holds no brief for the value of the bursting strength test in determining the quality of binders board. In his opinion the most important factors are; uniformity of thickness and density. However, since the article in question compares bursting strength and flexural strength, and contains statements concerning the superiority of the flexural strength test which are not supported by test data, a few discrepancies between their test data and their conclusions may be of interest.

In Table IA submitted with this letter comparisons are made between the minimum and maximum tests for bursting strength and flexural tests for each of the five standard groups. Comparisons may also be made between these figures and the respective averages of the groups. The figures in Table IA are taken from Table I of Scribner and Snyder's article. Table IA is divided into three principal parts. One part shows test data on the bursting strength test. The average bursting strength figure for each group is shown, together with the minimum and maximum figures. The difference between the minimum and maximum figures for each group divided by the average for the group is shown as "per cent extreme variation" in one of the columns. The flexural tests are listed under the heading "breaking load" There are two of these headings, to show tests in the lengthwise and crosswise directions of the board. The divisions in each part bear the same relation to the flexural tests as the divisions under "Bursting Strength" bear to the bursting strength test.

Examination of Table IA shows that the "per cent extreme variation" figure is less for the bursting strength test than it is for the flexural test in 80 per cent of the groups. Furthermore, the figures are more uniform for the bursting strength test, in the different groups, than they are for the flexural test. For example, the minimum figure in any group for "per cent extreme variation" in bursting strength is 34.1, the maximum 43.4. The corresponding figures for the flexural test are 41.4 and 66.7 in the lengthwise direction, 36.7 and 66.7 in the crosswise direction. The bursting strength test, based on the figures in Table IA, shows greater uniformity than the flexural test. The "per cent extreme variation" figures for bursting strength in the various groups are in favor of the bursting strength test, as compared with the flexural test. The statement, "The superior uniformity of the data obtained by the flexural test is apparent,—" is subject to question as to whether such tests actually show differences in quality which have an effect on the finished product, the book.

The article placed particular emphasis on the flexural properties of binders board. However, no data was given to show what flexural strength is needed in any of the standard thicknesses to produce boards satisfactory for bookbinding purposes. Neither was data given to show what the deflection at rupture should be for satisfactory boards. According to the system of rating given, see Fig. 6 of their article, the samples with the highest flexural strength in each group were placed at the top of the list. Does this mean these samples are the most satisfactory? Are we to infer that the other samples are not entirely satisfactory, especially those with the lowest flexural strength in each group? Until definite figures are developed showing the relationship of the flexural strength test to the other characteristics of the board, one does not know whether all of the boards tested were satisfactory for book binding purposes or not. Table IA shows that the "per cent extreme variation" figure runs as high as 66.7 for the breaking load. Variations of 20 to 67 per cent based on the group average, may be noted in the figures given for deflection at rupture in Table I of their data. Until more concrete data is given to show the value of the flexural test, it is not believed that it should be used in grading binders board. Such data can only be obtained by combining practical tests in the bindery with laboratory tests. The article does not indicate that any practical tests were made prior to drawing the conclusion that the flexural tests were valuable and were superior to the bursting strength test. In establishing standard specifications for binders board, an effort should be made to exclude all unnecessary tests and include only tests of known value, which are necessary to establish quality.

F. R. BLAYLOCK,
Research Associate Employing Bookbinders of America.

Mrs. King Heads Rex Paper Co.

KALAMAZOO, Mich., April 3, 1933.—Mrs. Helen Ralston King was elected president of the Rex Paper Company at a recent meeting of the board of directors. She succeeds her husband, the later Merrill Bryant King, who met death in an airplane accident near Charleston, S. C., March 2.

Other officials of the company remain the same, with Harry C. Bradford, vice president and secretary, and Roy V. McCulfor, treasurer. The board of directors consists of the officials and Mrs. Gertrude Collins.

Resolutions were adopted expressing loyalty and keen regret at the untimely death of their former president, Mr. King, which were presented to his family.

TABLE IA

	Bursting Strength				Breaking Load Lengthwise				Breaking Load Crosswise			
	Average Points	Minimum Points	Maximum Points	Per cent Extreme Variation	Average Pounds	Minimum Pounds	Maximum Pounds	Per cent Extreme Variation	Average Pounds	Minimum Pounds	Maximum Pounds	Per cent Extreme Variation
Group A.....	278	240	335	34.1	3.0	2.4	3.8	46.7	2.1	1.8	2.6	38.1
Group B.....	337	278	421	42.4	4.0	3.3	5.3	50.0	2.8	2.4	3.6	42.9
Group C.....	376	336	473	36.5	5.3	3.8	7.3	66.0	3.8	3.1	5.2	55.3
Group D.....	408	318	469	37.0	6.3	4.7	8.9	66.7	4.5	3.6	6.6	66.7
Group E.....	454	358	555	43.4	7.0	5.6	8.5	41.4	4.9	4.0	5.8	36.7

The difference between the minimum and maximum figures for bursting strength and breaking load of each group divided by the respective average figures for the group is expressed as the extreme variation for the group.

The New Brown Mechanical Flow Meter

By Thomas R. Harrison[1]

The Brown Instrument Company has rounded out its line of fluid measuring instruments by the addition of a series of mechanical flow meters. It is mentioned here as a series because this new flow meter has been developed in a number of combinations including: 1. Square root and evenly divided charts. 2. Automatic planimeter. 3. Multipen,—flow—pressure—temperature. 4. Compensation for pressure and temperature. 5. Automatic control and recording.

This new line of mechanical flow meters is featured by a simple direct lever-actuating mechanism, by a large powerful float, by a pressure tight bearing with grease reservoir, by a series of range tubes that permit changing the range of the meter without disturbing the orifice, and by a type of construction and assembly whereby the manometer may be taken apart and cleaned in the field without altering the calibration.

Representative of Entire New Line

The model illustrated in Fig. 1 (front and back view) is representative of the entire new line. The instrument mechanism is built into a die cast aluminum case which is attached to the manometer assembly by means of a three-armed bracket that also supports the high and low pressure chambers of the manometer. The high pressure

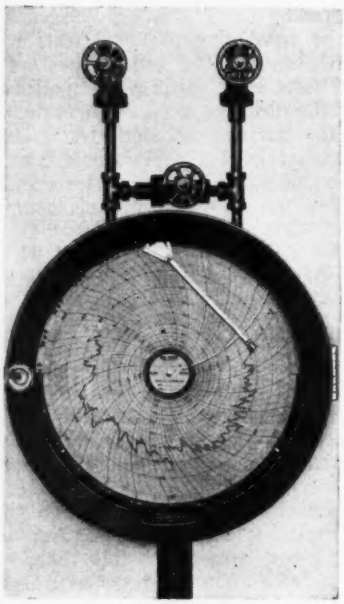

FIG. 1.
Front View.

chamber is a drawn steel cup and the low pressure chamber or range tube is seamless steel tubing. The two are connected by means of the steel U-tube shown below the high and low pressure chambers. The U-tube is provided with a drain plug at its lowest point for convenience in withdrawing the mercury from the manometer. The high pressure chamber is sealed on top by means of a gasket set in a recess in the cover and drawn against a double groove in the top edge of the high pressure chamber by means of the five heat-treated alloy steel bolts. A forged steel tee-fitting welded to the side of the high pressure chamber provides a means for mounting the pressure-tight bearing in a position for attaching the float lever on one end and the pen linkage on the other end. The float is large and powerful to the extent that there is no relative motion between the float and mercury surface and the position of the mercury surface is accurately transmitted to the recording movement. The linkages are simple and direct and so displaced that they result in an accurate calibration. The calibration is fixed by the construction of the meter because the relative positions of the float and pen linkages

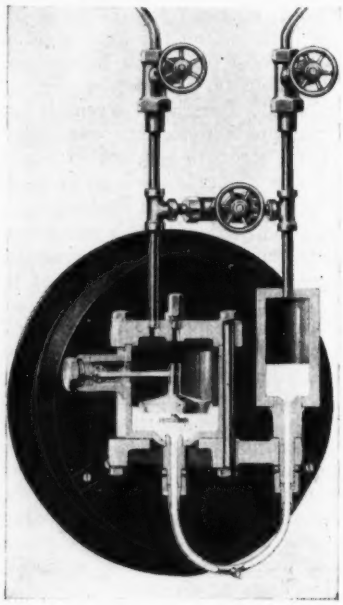

FIG. 1.
Back View.

are fixed by flats on the pressure shaft and the lengths of the links. Thus it is possible to drain the mercury from the manometer, open and clean the manometer, reassemble the manometer, add enough mercury to bring the pen to zero, and the calibration remains unchanged.

Either on Square Root or Evenly Divided Chart

This instrument can be furnished to record on either a square root chart or an evenly divided chart. The outward appearance of the two types is the same. The constructional differences lie in the transmission of the float movements to the recording pen.

The linkage of the flow meter using a square root chart differs from the linkage of the flow meter using an evenly divided chart in that in the latter the motion is transmitted through a pair of cams that are designed to roll in contact with each other, thus eliminating all sliding friction between the cam surfaces. The cams are used to transform the motion of the pen from that of being directly proportional to the float movement to that of being proportional to the square root of the float movement.

An instrument without the cams interposed between the linkage will record the pressure differential across the orifice on an evenly divided chart and flow on a square

[1]Director of Research, The Brown Instrument Co., Philadelphia, Pa.

root chart. An instrument with the cams interposed in the linkage will record flow directly on an evenly divided chart. In order to keep the magnification factor between float movement and pen travel within practical limits, the evenly divided flow chart is made evenly divided from 100 per cent of full scale down to 10 per cent of full scale and square root from 10 per cent to 0. The theoretical and actual zero lines both appear on the chart. In the case of multipen instruments, pens other than the flow pen start from the theoretical flow zero since they do not involve an infinite magnification factor as they approach zero and thus one set of divisions can be used for flow, temperature and pressure. All recorder models use 12 inch charts regardless of whether the chart is of the evenly divided type or of the square root type.

Pressure Tight Because of Precision

The pressure tight bearing through which the float motion is carried to the pen linkage is pressure-tight by virtue of the precision with which it is made. It consists of an outer housing bored out to form a generous reservoir for grease which surrounds the shaft. The grease acts both as a lubricant and a sealing medium as the pressure inside the manometer forces it from the reservoir to surround the shaft. The shaft is straight, of uniform diameter, and fitted individually in its bearings. A pivot ground on the outer end of the shaft bears against a hardened flat plate to take up the thrust resulting from the higher pressure within the manometer. The full scale rotary motion of the shaft is about 22 degrees and when the float goes beyond full scale it seals the high pressure chamber against mercury blow-out by means of a specially constructed seat in the high pressure chamber and a disc carried on the bottom of the float. This seal opens again, when the rate of flow falls within the range of the instrument.

The multipen models in addition to making a record of the flow, pressure and temperature, have been developed so that compensation for variations in the pressure and temperature of the fluid being measured can be automatically applied to the flow pen. That is, all multipen models are not provided with automatic compensation, but compensation for either one or both can be incorporated. Compensation is accomplished by varying a sensitivity lever between the manometer float and the flow meter pen automatically by means of a lever between the pressure or temperature responsive element and sensitivity lever. In cases of double compensation, that is, compensation for both temperature and pressure, the two variables are combined to give a net effect and this single net is applied to the movement of the sensitivity lever.

Variety of Speed Charts

All recording models of this new meter can be provided with either hand wound or electric chart drive, and either can be furnished in a variety of chart speeds. The hand wound clock is mounted in a dust proof case with chromium-plated, stainless steel, and cadmium plated parts used where these materials have proved superior in service tests. The electric clock is a radical departure from the general type of clock construction. It is driven by a 60 R.P.M. synchronous motor with the gearing mounted on stainless steel studs on the underside of a single plate. The electric clock plate also forms the base for mounting the control mechanism.

Models incorporating automatic recording planimeters and totalizers carry a sector on the pen shaft. The shape of this sector depends upon the type of chart used, square root or evenly divided. An integrator arm contacts the sector carried on the pen shaft every six seconds and a clutch engages the driving motor to operate the totalizer. The power required for the integrating mechanism is obtained directly from the motor. The totalizer is of the five-figure counter type and as each figure is brought into position it is recorded on a set of vernier graduations at the edge of the chart by means of an auxiliary pen. Thus, a record of both the rate of flow and the total flow is made on the chart. Where electric power is not available a spring driven clock operating the integrator once a minute will be used.

Control Models in Single and Duplex Form

Control models in both the single and duplex forms have been developed. The control models operate mercury switches and will handle 15 amperes at 110 volts directly through the instrument without the use of relays. A control segment is carried by the pen. The control mechanism locates the position of the control segment every six seconds and the mercury switches are tilted by the motor in a direction depending upon whether the pen is above or below the value on the chart at which the control index is set. The duplex control mechanism is used on two-pen instruments and will automatically control two variables. Combinations of flow with either temperature or pressure can be furnished in the duplex control models. In addition to operating motorized valves, pumps et cetera, control instruments may be used to operate alarm devices and signal lights.

All models are designed with easily changeable range tubes to facilitate shifting a meter from one job to another without disturbing existing orifice conditions. Mounting means have been provided so that any model may be mounted on a floor stand, wall bracket, or pipe saddle, and the new type die-cast. case permits flush mounting on a panel in keeping with other instruments in a flush mounted installation.

Weight Reduced

The weight of the instrument has been reduced as far as is consistent with a working pressure of 1000 pounds, and is portable in the sense that it can be carried from one job to another.

This new instrument has the support of years of experience in flow meter engineering and has been developed as the result of the demand for a mechanical companion to the Brown Electric Flow Meter.

For Reciprocal Treaties

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 5, 1933—Secretary of State Hull, has announced that he is hopeful that before this special session of Congress adjourns that it will have enacted into law a measure authorizing the President to conduct negotiations for reciprocal commercial treaties based on mutual tariff concessions. This would be right in line with statements which were made during the campaign by President Roosevelt.

It is pointed out that similar faculties have been granted to past Presidents, under certain restrictions. The Dingley tariff act of 1897 permitted the President to make tariff agreements by reducing the amount of the tariff on specified categories of commodities. The same act established a commission to proceed to make tariff agreements with such countries as France and on such products as wines and wine leaves, but the Aldrich act killed these faculties.

It is reported that the tariff situation will be taken up in connection with trade restrictions and war debts and that the new program will link these various subjects together in a series of interconnected conversations between the United States and the principal countries of the world.

American News Print

By A. M. Ferry[1]

We have read with much interest Mr. Fearing's comment in the PAPER TRADE JOURNAL of March 16. The organization called the Wire Cloth Manufacturers' Association is grateful to Mr. Fearing for giving greater publicity to the issue because we believe any controversial question of this kind is best solved when even those remotely concerned with it are given the opportunity to consider it.

In the first place, let us admit quite freely that the letter sent to newspapers and paper mills by the Wire Cloth Manufacturers' Association was inspired by a certain degree of selfishness, but according to a very considerable number of the paper mills in the United States it was what is sometimes called intelligent selfishness. The future welfare of the wire cloth industry is necessarily predicated upon the welfare of the paper industry and the manufacture of news print is, of course, a factor in the paper industry at large.

That the paper industry in general does not resent this form of selfishness is sufficiently evidenced by the replies received to our original letter. It is interesting also to note that a considerable majority of the newspaper publishers who replied to our original communication heartily approved the motive even though some of them felt the indictment was unnecessarily severe. No small number of these newspapers adopted the slogan for their mast heads indicating that their raw material was made in the United States by United States labor.

As to the facts of the case, we are well aware that it would be physically impossible for every newspaper in the United States to use paper manufactured by labor in the United States. This, however, is due to the fact that during the past two decades more news print and pulp mills ceased operations in the United States than were erected in Canada. We are equally aware that one of the principal reasons for the decrease in the supply of domestic news print is the tendency to buy a product that is made outside of our borders and that the continuing tendency will finally bring us to a situation where papers published in the United States will be entirely dependent on Canadian or other non-domestic news print.

It is a sound assumption that if a reasonable number of United States newspapers adopted the policy of buying United States news print, the domestic industry would find the facilities to supply a much larger proportion of the total.

Newspapers are a large factor in our national life and the United States should continue to have within its borders the facilities for producing the principal raw material of which newspapers are made. In an extremity any other policy would be a national calamity.

As noted above, many newspaper publishers in the United States see this point very clearly. A considerable number of them buy news print made in the United States at an annual increase of cost to the individual plant ranging from a few hundred dollars to a half million dollars, in order to insure a continuing domestic supply.

There has been a great hue and cry on the part of certain factors in our citizenry against over-emphasis on nationalism. They scoff at patriotism on the ground that patriotism produces war. In spite of this development in modern thought, many of us feel that these newspapers are to be commended for sacrificing present commercialism to long-sighted patriotism.

We have it on the best of authority that the Canadian news print industry is largely controlled by capital which originates in the United States. The United States today is suffering from the lack of employment for men and not for the lack of employment for capital. The man who is walking the streets in our own country will probably get very little satisfaction out of knowing that the competition which put him on the street is financed by American capital. To quote from Mr. Fearing's article, "Publishers, of course, know that their own prosperity depends upon the ability of the public to buy the goods that are advertised. They know that if buying power languishes, advertising slumps." It seems entirely proper to ask wherein the buying power of the man on the street is increased by the investment of United States capital in the Canadian news print industry.

On December 6, 1930, an advertisement was published in one of the trade papers, bearing the signature of Mr. Fearing. Part of the text was as follows:

"Efforts are being made in the United States and Canada to relieve existing unemployment. As a part of the program we suggest that purchases of news print might be limited to the product of North American mills, which, no matter where located, represent in many instances the investment of capital from the United States."

In his more recent article in the PAPER TRADE JOURNAL for March 16 he refers to "Sales and offerings of news print from European countries at unprecedentedly low prices," which have contributed further to harass the American news print industry and add to its unemployment problems.

If we are to avoid nationalism, is it not as reasonable to build up the United States news print industry along with the Canadian news print as it is to favor the so-called "North American" industry against Norway and Sweden? In other words, is it not logical to build up employment in the United States by buying as much news print in the United States as the United States can furnish?

Furthermore, and we must blush when we suggest this, would it not be good patriotism, and perhaps far-seeing commercialism, for the "North American mills" to buy their Fourdrinier wire from "North American manufacturers instead of getting a considerable portion of it from Germany, Austria, Sweden, Czechoslovakia, France and other countries, which are not "North American" and which, presumably, have no "North American" money invested in their wire producing plants?

The wire cloth industry in the United States, while not of great size, still has a heavy percentage of unemployed and it would seem that Mr. Fearing's principle of buying "North American", as far as news print is concerned, might well apply to buying "North American" where Fourdrinier wires are concerned.

It is unfortunate indeed that the human race apparently has not reached the point where commercial enterprises can be run on an entirely unselfish basis. There are few institutions of any size which can be entirely consistent in their selling and purchasing policies. On the other hand, most of us can muster arguments for the course of action which seems to us necessary, and it is highly desirable that such arguments be brought into the open, not only for the benefit of our customers and those who serve us, but for the benefit of clear thinking on our own part.

[1] Secretary, Wire Cloth Manufacturers Association, Chandler Bldg., Washington, D. C.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Niagara, Wis.—Kimberly-Clark Corporation, North Commercial street, Neenah, Wis., has plans for alterations and improvements in mill at Niagara, including part of machine and finishing departments, installation of new overhead trolley conveying system leading to finishing division, and other work. No estimate of cost announced. C. W. Nelson is chief engineer, in charge.

Seattle, Wash.—The Western Containers, Inc., 5053 East Marginal way, manufacturers of corrugated paper boxes and containers, is said to have concluded arrangements for lease of new factory to be constructed at 4634 East Marginal way, by the Ladd Estate, 506 Hoge Building, recently referred to in these columns, and will occupy for a new plant unit. It will be one-story, 150 x 246 feet, estimated to cost about $75,000, with equipment; close to $40,000 of gross sum noted will be used for machinery installation. The Austin Company, Dexter-Horton Building, is architect and engineer, and it is understood, will receive the construction contract.

New York, N. Y.—The Eagle Paper Box Company, Inc., recently organized with capital of $10,000, by Max Bookspan, 1656 48th street, Brooklyn, N. Y., and associates, plans operation of local plant for manufacture of a line of paper boxes and containers. Morris Shapiro, 1644 Anthony avenue, Bronx, New York, is interested in new company.

Boston, Mass.—James Flett, 330 South Wells street, Chicago, Ill., paper products, has organized a new subsidiary under name of the Central Paper Mill Supply Corporation, to operate a plant in the vicinity of Boston. It is understood that operations will begin at once.

St. Louis, Mo.—The Peavey Paper Mills, 120 Dock street, W. Peavey, manager, is considering early establishment of a new local plant for paper converting service. It is understood that property will be leased and paper-cutting and other equipment installed for sizable output.

Nutley, N. J.—George La Monte & Son, Kingsland road, manufacturers of special papers, have been advancing operations at their mill, increasing the working time of a number of employees heretofore on part-time basis. A few departments have been running on an overtime schedule. It is expected to hold to the increased basis for some weeks to come.

Chicago, Ill.—The Commercial Carton Box Company, 7240 South Park avenue, manufacturer of paper boxes and containers, has filed notice of company dissolution under state laws.

New Brunswick, N. J.—J. Lapelosa, 171 Remsen avenue, paper manufacturers' supplies, paper stocks, etc., has asked bids on structural steel framing for a new plant on Georges road, two-story and basement, 60 x 130 feet, to be used for paper converting purposes, storage and distributing service. The new unit is reported to cost over $35,000, with equipment. H. G. Bach, 63 Schureman street, New Brunswick, is architect.

Detroit, Mich.—The Detroit Paper Products Corporation, 5800 Domine street, manufacturer of corrugated paper boxes and containers, has developed a new form of paper insulating material for use in refrigerators, and will carry out extensive production. The new material has a glazed surface, designed to reflect the heat waves, with small numerous air pockets to act as a further bar to the passage of heat into the refrigerator unit. The company is said to have secured some sizable orders for the new paper product.

Monroe, La.—The Trinity Bag and Paper Company, 23 West 43rd street, New York, N. Y., has completed the construction of building for its new mill at Monroe, recently referred to in these columns, and will proceed with machinery installation at once. The new unit is one-story, 90 x 200 feet, located near the mill of the Brown Paper Mill Company. It is proposed to provide machinery for employment of about 125 persons for initial operations. Benjamin Mintz, an official of the company, is in charge at plant site. A considerable part of the equipment installation will be from company plant at Brooklyn, N. Y.

Americus, Ga.—J. B. Jefferies and J. P. Broadway, both of Barnsville, Ga., have negotiations under way for acquisition of the American Rayon Mills, Americus, manufacturers of cellulose rayon products. The plant has been closed for about two years past. The new owners propose to make alterations and improvements, including repairs to machinery and necessary replacements, and to place the plant in operation at early date.

Newark, N. J.—The Newton Carton Company, Newton, N. J., manufacturer of paper boxes and containers, has closed arrangements for lease of the second floor in factory building at St. Francis and Ferry streets, Newark, and will occupy for a new branch plant. It is proposed to install equipment at once, having the unit ready for service in April. Morris Kessler, one of the officials of company, will be in charge of operations at the new branch.

New York, N. Y.—The Scott Paper Industries, Inc., 186 Wooster street, has arranged for change of company name to the Hamilton Paper Industries, Inc.

Montreal, Que.—The Walwer Paper Company, Ltd., 119 Young street, is planning rebuilding of portion of storage and distributing plant, recently damaged by fire. An official estimate of loss has not been announced.

New Companies

New York, N. Y.—Tish, Inc., has been chartered with capital of $20,000, to manufacture and deal in paper products of different kinds. The incorporators are Edgar W. Garbisch, Dr. Edgar Sampson and Firman Hass, all of 405 Lexington avenue, New York.

Long Island City, N. Y.—The Exchange Paper Prod-

ucts, Inc., has been incorporated with capital of 100 shares of stock, no par value, to manufacture and deal in paper goods of various kinds. New company is represented by Rubin & Goldstein, 26 Court street, Brooklyn, attorneys.

New York, N. Y.—The American Wrapper Corporation has been incorporated with a capital of $250,000, to manufacture and deal in wrapping papers, paper containers and kindred paper stocks. The principal incorporators are Ned G. Begle and B. A. Bartlett, Graybar Building, New York.

Springfield, Mass.—The Standard Paper Merchandise Company, Inc., has been incorporated with capital of 30 shares of stock, no par value, to deal in paper products of various kinds. Michael Mazer is president; M. K. Mazer, 19 Market street, is treasurer and company representative.

Wilmington, Del.—The Coaster Corporation of America, Inc., has been incorporated under state laws with capital of 100 shares of stock, no par value, to construct and operate pulp and paper mills. The incorporators include E. P. Crawford and D. B. Hilliard, Denbigh Hall Building, Wilmington.

Los Angeles, Cal.—The Standard Paper Box Sales Company has been incorporated with a capital of $10,000, to deal in paper boxes and containers. The incorporators are Charles Ruble and Harry L. Lourie. Company will be represented by Euler & Subith, 819 Story Building, Los Angeles, attorneys. It is understood that the new organization will be affiliated with the Standard Paper Box Corporation, 3837 Broadway place, Los Angeles, manufacturer of paper boxes, cartons, etc.

Whealey Heads Corrugated Paper Box Co.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., April 3, 1933.—A. T. Whealey was elected president of the Corrugated Paper Box Company, at the annual meeting held in Toronto a few days ago, succeeding the late J. S. A. Whealey. The resignation of Senator Spencer from the board of directors was accepted and W. J. Hilton, of Winnipeg, and William Lawrence were elected to the board. As a result of strong sales efforts, which produced a slight increase in turnover, continued fairly stable conditions in the industry, and reductions in costs and expenses, the annual report of the company reveals an improved position. The year produced an operating profit of $61,097, as compared with an operating loss of $25,815 in 1931 and profits of $131,191 in 1930, $159,570 in 1929 and $174,256 in the first nine months of 1928, marking the inception of the organization in its present form. After charging about the usual amount to depreciation, there was a deficit in 1932 of $17,416.

The report states that the management is continuing its efforts to keep costs and expenses at as low a point as possible and to increase sales, but until an improvement in general business conditions takes place, increasing the demand for the company's products, the resumption of profitable operation cannot be expected. As a result of the moderately better operating results of last year, the company's financial position was improved. Net working capital increased to $123,139, being on a ratio of 3.23 to 1, with current assets $177,766, and current liabilities $54,627.

Japanese Paper Productions

[FROM OUR REGULAR CORRESPONDENT]

Paper production in Japan last year reached a total of 655,658 short tons as against 665,292 short tons in 1931 according to figures released by the Japanese Paper Manufacturers' Association. Sales last year amounted to 707,384 tons compared with 664,793 tons in 1931.

New York Trade Jottings

A. Koroleff, forester-secretary of the Woodland Section of the Canadian Pulp and Paper Association, is a New York visitor this week.

* * *

George Oliphant, president of Castle & Overton, Inc., will discuss the pulp situation at the next meeting of the Eastern Division of the Salesmen's Association of the Paper Industry, which will be held at the Hotel Roosevelt, New York, next Monday, April 10.

* * *

Ben Sweetland, of Sweetland, Newton & Martin, was the guest speaker at the regular weekly luncheon and meeting of the Eastern Division of the Salesmen's Association of the Paper Industry, held at the Hotel Roosevelt, New York, on Monday last. Mr. Sweetland discussed "Direct Mail Advertising" in a very informative and entertaining manner.

* * *

The 27th Annual Meeting of the Swedish Chamber of Commerce will be held, by invitation of the management of the Swedish American Line, aboard the motor ship *Gripsholm* at the Line's dock, Pier 97, Hudson River, foot of West 57th street, New York, on Wednesday, April 12. In conjunction with the meeting, a luncheon will be served in the main dining room of the liner at 12:30 o'clock prompt.

* * *

The Calco Chemical Company, Inc., of Bound Brook, N. J., has been appointed exclusive sales agent for the Ultramarine Company of New York City. For many years Calco and Heller & Merz have marketed the bulk of the Ultramarine company goods and now the sales have been placed entirely in their hands. The National Ultramarine Company brands, which were acquired two years ago, are also included.

Prints Edition on Slash Pine Paper

A special telegram from Savannah, Ga., dated April 3, to the *New York Times* states that the Soperton (Ga.) *News* today issued an edition with news print produced by the Georgia paper laboratory where Dr. Charles H. Herty of New York has been conducting experiments for nearly a year. The *News* was the first paper to be so issued.

Printers said the paper "took the ink" as well as other news print, and some of them said "it showed up a little better." Copies were sent to President Roosevelt because of his interest in forestry.

The pulp was made from slash pine trees only seven years old, which were grown by James Fowler of Soperton.

The laboratory is continuing experiments despite Governor Talmadge's recent veto of a $26,000 appropriation by the Georgia Legislature.

News print manufacturers are to come here next month to inspect the plant.

Boston Trade Happenings

The Centaur Paper Mills have leased space on Somerville Avenue, Somerville, from the John P. Squire Company for a term of years.

William F. Mann, salesman for Baird & Bartlett Company, has returned from an enjoyable trip to Bermuda and the West Indies.

Mr. Gibson, of the Claremont Paper Company, Claremont, N. H., visited the trade last week.

G.T.M. SPECIFIED
GOODYEAR COMPASS (ENDLESS) CORD BELT
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PAPER TRADE JOURNAL
ESTABLISHED 1872

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THE BUSINESS OUTLOOK

On March 13 letters were sent by the Strathmore Paper Company to a number of people in different parts of the country asking opinions on the business outlook. The list included paper manufacturers, merchants and converters, bankers and other business men in various lines of industry and commerce.

The replies have been classified as follows:

Geographical Location	Replies Received to date	Business Outlook: Enthusiastic	Optimistic	Hopeful	Pessimistic	Recovery: Rapid	Gradual
East	86	16%	69%	12%	3%	14%	86%
Midwest	62	18%	64%	8%	10%	10%	90%
South	23	5%	70%	25%	0	21%	79%
Mountain States & Pacific Coast	9	11%	55%	11%	23%	0	100%
	180	15%	67%	12%	6%	14%	86%

Certain facts stand out clearly in the letters received.

Confidence Replaces Fear

1. Confidence has replaced fear and distrust to a remarkable degree since March 4th.

Banking Vastly Improved

2. Banking conditions throughout the country as a whole are vastly improved. In most of the localities heard from, the great majority of banks opened promptly.

People Solidly Back of President

3. Regardless of political affiliations, the people are solidly back of President Roosevelt. Republicans in many instances are most enthusiastic in their praise.

Optimistic Over Future

4. A spirit of optimism over the future of business prevails, varying from deep enthusiasm to mild hopefulness. Few pessimistic notes are discernible although the need for caution is frequently stressed.

FOREIGN PAPER TRADE

United States exports of paper and paper products in January were valued at $1,011,726, representing decreases of 12 per cent and 25 per cent, respectively, compared with the preceding month and the corresponding month last year according to the Paper Division of the Department of Commerce.

Compared with the preceding month wall paper exports registered the heaviest increase, amounting to $14,983, against $3,905 in December. Other increases were as follows: Other paper board, 143 per cent; wallboard of paper or pulp, 120 per cent; bristols and bristol board, 58 per cent; fiber insulating lath or board, 37 per cent; sheathing and building paper, 25 per cent; boxboard (paperboard and strawboard), 22 per cent; paper bags, 16 per cent; tissue and crepe paper, 12 per cent; blood paper, not coated, 7 per cent; while slight decreases over December occurred in vulcanized fiber, sheets, strips, tubes and rods, toilet paper, blotting paper, filing folders, index cards and other office forms and envelopes.

On the other hand, very heavy decreases when placed beside the preceding month's figures are shown in the outgoing shipments of news print, papeteries, cover paper, overissue and old newspapers, surface coated papers, paper towels and napkins. Compared with a year ago substantial increases are shown in surface coated paper, tissue and crepe papers, bristols and bristol board, other paper board, fiber insulating lath or board and slight increases in wrapping paper, blotting paper, and vulcanized fiber sheets, strips, tubes and rods.

Exports of paper base stocks in January were valued at $248,690, a 10 per cent increase from December record, but a 10 per cent decrease from that of a year ago. Pulpwood exports amounted to $17,794, a heavy increase over the preceding month and a slight increase over January, 1932. Sulphite wood pulp exports totaled $202,542, a 4 per cent increase over December figure, but a 6 per cent decrease over January, 1932.

Rags and other paper exports showed a slight increase over December but a considerable decrease over those of a year ago.

January imports of paper and paper products totaled $5,925,682, compared with $6,204,526 in December and $9,045,070 in January, 1932. Standard news print imports were valued at $5,414,995, a slight decrease over the preceding month and a substantial decrease over the figure for January, 1932. Imports of cigarette paper, books and covers, with a valuation of $178,205 represented also a slight decrease over the preceding month, but a heavy decrease over those of a year ago. Kraft wrapping paper imports showed an increase of 30 per cent when compared with December and a 135 per cent increase when compared January, 1932. When placed beside the December figures very heavy increases over the preceding month are also shown in incoming shipments of uncoated paper, decorated or embossed, tissue and similar paper, leatherboard, test and wallboard, wall paper,

duplex decalcomania, not printed and papier-mache and $4,446,319, compared with $7,166,025, a year ago, and pulp manufactures.

January imports of paper base stocks were valued at $5,214,577 in the preceding month. Imports of pulpwood fell considerably short of the December figure as well as of that for January, 1932, which was also true of imports of mechanically ground wood pulp, both bleached and unbleached, sulphite pulp, unbleached, sulphate pulp, bleached and of rags for paper stocks. Unbleached sulphate pulp (Kraft) imports totaled $1,120,536, a heavy increase over December, but a heavy decrease over January, 1932. Soda pulp imports were also high when compared with the preceding month but low when compared with a year ago.

Holyoke Paper Mills File Reports

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE Mass., April 4, 1933—Several Holyoke paper mills have filed reports of financial conditions as follows:

Whiting Paper Company, as of December 31. Assets—Cash $195,060, accounts receivable $488,896, notes receivable $8114, merchandise $688,984, real estate $383,411, machinery $221,269. Liabilities—Accounts payable $8237, capital stock $300,000, surplus $1,677,500.

Whiting & Co., Inc., as of December 31. Assets—Cash $36,603, accounts receivable $237,951, merchandise, $72,287, real estate $376,134 machinery $282,593, profit and loss deficit 251,668. Liabilities—Accounts payable $59,784, special reserve $1,097,454, capital stock $100,000.

Valley Paper Company, as of December 31. Assets—Cash $37,496, accounts receivable $96,389, notes receivable $8669, merchandise $158,566, securities $452,206, real estate $213,344, machinery $113,735, prepaid items $888, treasury stock $11,300. Liabilities—Accounts payable $2408, reserve for advertising, $20,000; reserve for bad debts $15,000, capital stock $200,000, surplus $855,188.

Crocker-McElwain Company, for year ending December 31. Assets—Cash $128,501, accounts receivable from customers $45,928, notes receivable from customers $3,800, notes receivable $4000, merchandise $206,362, supplies $32,192, securities $545,634, real estate $461,097, machinery $280,980, motor vehicles $200, raw materials $75,080, furniture, etc., $7872 prepaid items $4191, treasury stock $62,000. Liabilities—estimated taxes $1500, reserve for credit insurance $29,938, capital stock $1,750,000, surplus $87,004.

Chemical Paper Manufacturing Company, for 1932. Assets—Cash $42,536, accounts receivable $105,188, notes receivable from customers $3889, notes receivable from others $6550, merchandise $156,176, supplies $35,558, securities $31,330, real estate $727,996, machinery $722,316, motor vehicles $1091, equipment and tools $17,881, furniture, etc., $11,642, prepaid items $4112, raw materials $109,026. Liabilities—Accounts payable $18,160, reserve for credit insurance $29,141, capital stock $2,050,000, deficit $122,007.

To Represent Kleen Products

The Kleen Products Company, North Wales, Pa., maker of fiber spoons, forks, plates, etc., announces the appointment as factory representatives of Arliss, Campbell & Gault with offices in Tacoma and Seattle, Wash., and Portland, Ore. They will cover the Northwest territory.

Announcement also is made that S. L. Barnhart of Peoria, Illinois, is now representing Kleen Products Co. in Illinois and Eastern Iowa.

Many Going to Savannah

More than fifty have already indicated their intention to join the pulp and paper makers' cruise to Savannah on April 28th. Since there are only about 100 staterooms on the "City of Montgomery," which has been chartered, reservations will only be accepted up until the time all staterooms have been taken. Many who are waiting to make a last minute decision will undoubtedly be disappointed. A large proportion of those going are taking their families along for an enjoyable spring cruise.

FIRST DAY'S PROGRAM

The boat which leaves New York at 4:00 p.m. Friday, April 28th will arrive in Savannah on Monday morning, May 1st. Breakfast will be served aboard ship, after which the entire party will be taken to the delightful De Soto Hotel, where there will be a symposium on the manufacturing and economic aspects of the use of young Southern pines for white paper manufacture. In the afternoon there will be an inspection trip to the paper laboratory of the State of Georgia, where the actual cooking and grinding of wood and the making of newsprint will be seen.

In the evening the citizens of Savannah will entertain the guests in the inimitable manner of the Old South.

TOUR FOR MAY 2, 1933

Leave De Soto Hotel promptly at 10:00 A. M.
Arrive Hinesville at 12 (noon). Picnic Lunch will be served.

Savannah to Hinesville, 45 miles.

Leave Hinesville at 1:30 P. M., stopping to see Young Slash Pine Reproduction and effect of Fire. Arrive Townsend at 3:00 P. M., and inspect W. T. Scott's Sawmill.

Hinesville to Townsend, 44 miles.

Leave Townsend at 3.45 P. M. for Eulonia and Pine Harbor Naval Stores Operation, arriving at 4:15 P. M.

Townsend to Eulonia, 6 miles

Inspection of woods operation, chipping, dipping and distillation of Crude Gum.

Leave Eulonia 6:00 P. M. 10 minute stop at Old Midway Church and Cemetery. Arrive Savannah 8:00 P. M.

Eulonia to Savannah 50 miles. Total miles—145.

Persons who contemplate making the trip are requested to get in touch with R. G. Macdonald, secretary of the Technical Association of the Pulp and Paper Industry, 370 Lexington Avenue, New York, as early as possible in order to insure making the most favorable arrangements.

Coty Co. Ships Big Bag Machine

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., April 3, 1933—Announcement is made of the shipment by the Coty Machine Company of another large bag manufacturing machine to the Adams Bag Company, of Chagrin Falls, Ohio. The machine is of the one-half barrel combination brand and produces bags in a continuous operation from the roll of paper. The range of the machine is 15 by 24 inches inclusive in width and 28 by 48 inches in length with a speed guaranteed up to 110 bags per minute. Several motor trucks were used in making the shipment.

The machine is said to be similar to the order shipped recently to the San Rafael Paper Company, at Mexico City, and negotiations are under way with several prospective purchasers relative to further orders. For the past few weeks the machine has been inspected and demonstrations given to many of the prominent bag manufacturers of the country.

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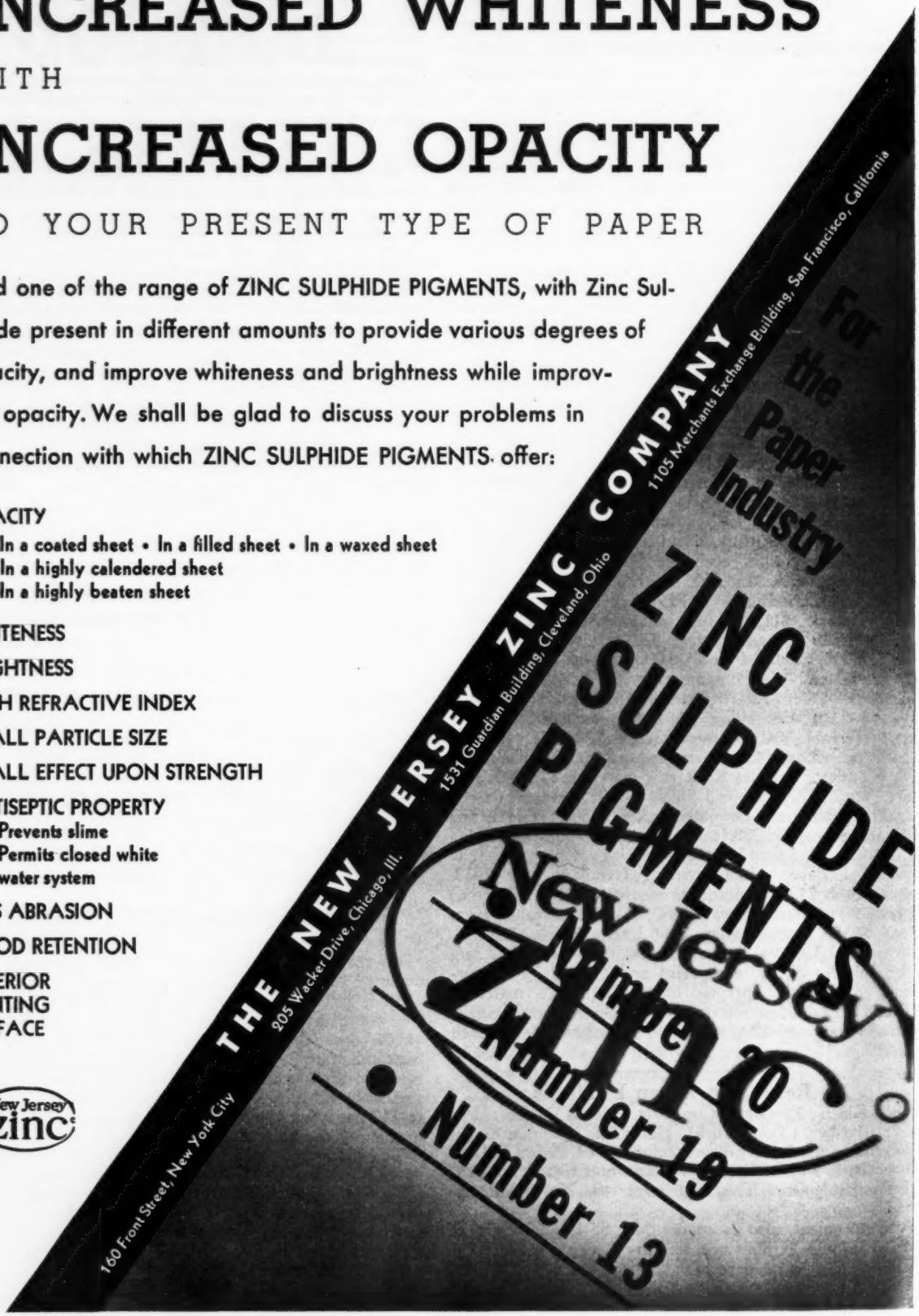
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Number 19
Number 13

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Pulp Testing Committee Annual Report

This report is divided into two sections—the first relating to the measurement of pulp properties by physical means and the other part touching upon tests of a chemical nature.

Physical Tests

Our committee is still facing the following largely established set of physical testing specifications for pulp as outlined in the committee report presented at the annual meeting of TAPPI in New York on February 19, 1930:

I. Method of sampling pulp.

II. Apparatus and method used in making and conditioning the sheets.

III. Preparation of sheets from disintegrated but unprocessed fiber (for unbeaten, felting or initial test).

IV. Preparation of sheets from both pebble mill hydrated and disintegrated fiber after two or more time intervals.

V. Preparation of sheets from small beater processed fiber with stock for the sheets being removed progressively from the beater at regular time intervals.

VI. Provision is to be made for the testing of the above pulp sheets according to one or more of the following types of physical measurement:
   a. Bursting strength
   b. Tensile breaking strength
   c. Tearing strength
   d. Folding endurance

VII. Results shall be reported in "Per cent points" or numerically—one hundred times the ratio of average strength units observed divided by the average basis weight (25 x 40,500) of the air dried (at 65 per cent R. H. and 70 deg. F.) test sheets.

Bursting strength, tearing strength, folding endurance and tensile strength shall be reported in this manner. Per cent stretch shall be reported as in the official method for determining stretch of paper.

Item I of this program of tests has just been approved by ten of our fourteen committee members as part of a revised official test for moisture. This revision was made by the joint efforts of Prof. Benson and Messrs. Laymon and Willets. It therefore ranks now as a tentative official standard TAPPI method of which that phase of the specifications, relating to "Sampling" will serve as an important initial step not only for the making of a reliable moisture test, but also for the above physical tests and for any of the numerous chemical pulp tests now adopted, or those to be adopted as "official" by our association in future years. A few of our committee members have disapproved of certain details of the Benson-Laymon-Willets revision. It seems probable, therefore, that during the coming year a further slight revision of this important procedure will be in order, after giving careful consideration to the specific objections and constructive criticisms of Messrs. Billington, Bradford, Clark, Rothchild and Whittington and of others who may wish to submit their suggestions to Secretary Macdonald, after reading the revised procedure by Benson, *et al.*

The second item in the above outline (II. Apparatus and method used in making and conditioning the sheets.) is represented by the tentative official method of TAPPI for "Forming and Testing Pulp Sheets" as adopted a year ago on the recommendation of James d'A. Clark. This method is the only one of its kind that has received rather wide spread international recognition. It calls for equipment that is distinctly different from that formerly used in United States for the making of test sheets from pulp. During the probationary minimum interval of a year for this method, it was considered desirable to request the pulp and paper section of the U. S. Forest Products Laboratory to investigate the merits of the British type of circular mold (used in this method) as compared with three American and one Swedish sheet molds of square or circular screen face. The Madison laboratory kindly consented to make for our association an unbiased, comparative performance test of this kind. Unfortunately, on checking up, we found it impossible to borrow a spare unit of the Bureau of Standards type at a time when it was to have been used. It was, therefore, necessary to omit including this worthy sheet mold with the other two of American design when the time came for the making of parallel performance tests. A progress report, describing these tests is being presented at this convention by Messrs. Baird and Doughty. Their recommendations will be of considerable help as a guide to our members in deciding whether or not the Clark procedure should receive the full approval of TAPPI at the time a final vote is taken.

The third item of the above outline with regard to the making of an "initial" or "unbeaten" pulp strength test is to be regarded as "unfinished business," since it was decided over a year ago to abandon the tentative initial test selected by Mr. Genberg's Sulphite pulp committee early in 1928. Should any members of the pulp testing committee be sufficiently interested in this variety of physical test during the next year or two, it is probable that

Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., February 13-16, 1933.

a revised method may receive favorable action by the committee.

At the present time the writer is of the opinion that interest in the "initial" test is on the wane in United States for the chief reason that relatively few of our mills in a time of low operating rates such as this are disposed to rush the raw stock into finished paper or paper board with little or no beating or refining action. In the manufacture of news print paper a lack of beater treatment is undoubtedly characteristic of certain high speed mills, especially in Canada. It would seem advisable for us to follow the lead of the Canadian technical section when it comes to choosing specifications for such a type of test as this. The preference in Canada for an unbeaten test now seems to lean rather strongly to the use of the British stirrer and sheet making equipment.

Prof. Peterson of our committee is now arranging a set of specifications to cover item IV ("Preparation of sheets from both pebble mill hydrated and disintegrated fiber after two or more time intervals"). His contribution will bring up to date the 1916 pebble mill pulp method adopted by TAPPI on the recommendation of R. B. Wolf and his sulphite pulp committee with certain improvements in design or technique that have resulted from these seventeen years of usage and experience. This kind of pulp processing test is rather widely used in mills of U. S. A., particularly for purposes of routine control. It therefore merits a place of respect on a par with its rival method, the beater test.

Part V of the above outline (Preparation of sheets from small beater processed fiber) is the only one of the set that now ranks as a full official standard test of TAPPI, having received 52 approving votes, 20 disapprovals—13 members not voting one way or the other. A slight revision of the beater test specifications has recently been made on the advice of Paul Boronow, sales engineer of the Valley Iron Works. He claims that monel metal is totally unsuited for use as beater tackle in dealing with kraft or other hard pulps. On his advice the use of stainless iron (No. 12 with 11½ to 13 per cent chromium and no nickel) has been substituted in place of monel. A dimensional drawing is to accompany the revised method when published in loose leaf form, giving a number of important dimensions in addition to those formerly published. It is interesting to learn that by far the most thorough published piece of research with regard to this pulp beater test appeared last year under the authorship of Dr. G. K. Bergman in Finland. After some preliminary results with the beater of a discouraging nature, he overcame physical obstacles and obtained numerous data of a kind decidedly favorable to the equipment and method involved.

Dirt in Pulp

A novel method for estimating the dirt content of pulp has been submitted to our committee and is being described at this convention by James d'A. Clark. It now lacks one or two votes of receiving the required 2/3 in the affirmative necessary for it to qualify as a tentative standard method of TAPPI. A full description of just how the test is applied to pulp and paper was published by Clark, von Hazmburg and Knoll in the February 2, 1933 issue of PAPER TRADE JOURNAL. It is hoped that one or more of the five committee members who voted against the method or declined to vote at all will be influenced after reading this description to change their minds. Our association is sorely in need of some dependable test for dirt in pulp and paper. It is believed that the symposium on "Dirt" at this convention will help materially to clear the way toward the adoption of some suitable tentative method that is reasonably quantitative and free of the personal factor.

Freeness Value of Pulp

Mr. R. H. Wiles (Research Division of International Paper Company at Glens Falls, N. Y.) has promised to aid our committee by making a systematic study of various available freeness testers. He has now on hand five kinds and hopes to obtain one or two others. When his work of making these comparative performance tests is completed a specific recommendation will be made to the committee as to which test is most deserving of our approval.

Other Physical Tests for Future Consideration

Other physical tests for pulp that should be formulated as tentative methods by the committee in the next year or two are:

A. Color of pulp (by rotating disc method, by Hess-Ives type of instrument or better by some photo-electric cell apparatus)
B. Screen analysis as by the Forest Products Laboratory method or by some method subsequently developed
C. Sedimentation test
D. Strength qualities of pulp by static bending test of the Forest Products Laboratory
E. Flobility (of R. B. Brown)
F. Springback (of R. B. Brown)
G. Any other physical test or tests for pulp that may have been overlooked or new ones that may be evolved and published in the future

Chemical Tests

During the year methods 1, 2 and 3 have been formally approved by TAPPI as official standard methods. The ballot response in each case was as follows:

Method No.	Title	Reference	Voting Response: Yes	No	Non-committal
1	Isolation of cellulose by chlorination method	Paper Trade Jour. *91*, No. 11, 81-82 (Sept. 11, 1930); Tech. Assoc. Papers XIV, 345-46 (May, 1931).....	64	1	23
2	Chlorine consumption of pulp	Same as for No. 1 method	61	3	23
3	Alpha cellulose	Tech. Assoc. Papers XIV, 121 (May, '31).....	71	2	16

The following three chemical tests for pulp have passed the required probationary period of one year and should be given a final vote at once:

4. "Determination of methoxy content of pulp" as arranged by P. S. Billington of the U. S. Forest Products Laboratory at Madison, Wisconsin.
5. "Determination of cuprammonium hydroxide viscosity of pulp" as arranged by M. D. Reuben of the York Haven Paper Co., York Haven, Pa.
6. "Cold and hot water solubility of pulp" as arranged by P. S. Billington of the Madison laboratory

Tentative Standard Methods for the Coming Year

(7) On the advice of Dr. Youtz the method he sponsored a year ago for "Determination of moisture in pulp lap, wood chips and sawdust by xylene treatment" is to be modified by the substitution of toluene for xylene. In making this change it is well to specify that the reflux condenser be at least 24 inches in length. This method should continue in the tentative class for another twelve months.

(8) The method of determining *ash* in pulp as arranged recently by H. W. Laymon is now in the class of tentative methods by virtue of having received the unanimous approval of our committee.

(9) The method for determining the alkali solubility of pulp in one per cent NaOH as arranged by P. S. Billington has recently become a tentative standard method. It has, however, become entangled in a conflict with a similar method being sponsored by H. W. Morgan of the Fibrous Materials Testing Committee. Mr. Morgan's suggested changes or modifications of the Billington method are a move in the right direction. This situation, however, is but one illustration of the folly of originating chemical tests in three separate, but closely related committees such as, "Fibrous Materials Testing," "Pulp Testing" and "Paper Testing." The writer believes that much lost motion would be eliminated, if a new committee were established to be known as "Fiber Chemical Testing," renaming the other committees as, "Raw Materials Physical Testing," "Pulp Physical Testing" and "Paper Physical Testing." The chemical tests for sawdust, pulp and paper are all basically alike, differing only in a minor detail or two. Much time would be uselessly wasted in the future, if the corresponding methods for the three committees were each time submitted to a joint conference, after being independently approved in varying modifications by the members of those separate committees. Our committees do not have the conveniences of the United States Congress in getting together for joint conferences in person and to attempt such conferences by correspondence is unduly wasteful of effort and time.

Chemical Pulp Tests Promised for the Future

The following chemical pulp tests are now being arranged in the formal TAPPI order by P. S. Billington and will be sent to committee members for a vote in the near future:

11. Acid hydrolysis.
12. Alcohol-benzene solubility
13. *Beta* and *gamma* celluloses
14. Bleach consumption (based on 35 per cent available chlorine content in calcium hypochlorite)
15. Pentosan and methyl pentosans
16. Potassium hydroxide (10 per cent) solubility

W. H. Moore has assumed responsibility for the *ether solubility* test and Mr. Wiles in collaboration with Prof. Benson will submit a *permanganate test* for pulp after first making a critical study of some four or five modifications of the test as previously described in the technical literature. Prof. H. K. Benson and his associates at the University of Washington will similarly prepare what they consider the most worthy test for *lignin in pulp* after considering the papers on lignin which are being given at this convention and after completing certain research investigations now in progress in their laboratories. We still are in need of some competent individual to arrange a suitable copper number determination for pulp. This appears to be the last method on our list of "unfinished business." Many other chemical tests for pulp of a highly specialized nature such as sulphur content, acidity, etc., will follow in due time. Judging by present indications, our goal in the form of some 22 chemical tests for pulp as listed under "Future Plans" in the Annual Report presented in February, 1931, should be easily reached by the end of 1933.

H. K. Benson
P. S. Billington
H. C. Bradford
J. d'A. Clark
G. P. Genberg
H. W. Laymon
W. F. Moore
F. C. Peterson
M. D. Reuben
H. A. Rothchild
E. F. Whittington
R. H. Wiles
W. R. Willets
D. E. Cable, Chairman

New TAPPI Members

The Executive Committee of the Technical Association of the Pulp and Paper Industry has announced the following recent elections to memberships:

James W. Perry, American exchange student, Technische Hochschule, Stuttgart, Germany, is a 1927 graduate of the North Carolina State College, and in 1931 received his S. M. from the Massachusetts Institute of Technology. He was formerly a chemist with the North Carolina Department of Agriculture and with E. L. Patch, Stoneham, Massachusetts.

Otto H. Sangder, chemical engineer, Grays Harbor Pulp and Paper Company, Hoquiam, Wash., is a 1931 graduate of the University of Washington.

Nick H. Stuart, buyer for Remington-Rand, Inc., Buffalo, N. Y., was formerly purchasing agent and factory manager of the Kalamazoo Loose Leaf Binder Company, Kalamazoo, Mich.

Arthur G. Wakeman, mill manager, Fox River Paper Company, Appleton, Wis., is a 1921 graduate of the Massachusetts Institute of Technology. He was formerly with V. D. Simons, consulting engineer, Chicago; the Beloit Iron Works, Beloit, Wis., and the Kimberly-Clark Corporation, Appleton, Wis.

Milton J. Neubauer, chief chemist, West Virginia Pulp and Paper Company, Mechanicville, N. Y., is a 1912 graduate of Union College. From 1912 to 1914 he was chemist for the Halcomb Steel Company of Syracuse, N. Y.

Kalamazoo Valley TAPPI Meets

The Kalamazoo Valley Section of the Technical Association of the Pulp and Paper Industry met at the Columbia Hotel, Kalamazoo, Mich., March 30, 1933. Harry Bradford of the Rex Paper Company, chairman, presided.

Howard Cyr of the New Jersey Zinc Company spoke on "The Use of Zinc Pigments in the Paper Industry." This paper covered the experimental work carried on last year at the Institute of Paper Chemistry in Appleton, Wisconsin, and also the record of the results obtained in a number of paper mill runs.

C. R. Whipple of the Beloit Iron Works, Beloit, Wis., read a paper entitled "Cooperative Machinery Building." In this paper Mr. Whipple discussed machinery maintenance and outlined the facilities provided in the shops of the large machine builders. By studying the difficulties encountered by paper makers relative to machinery the builders have been able to make many improvements in machine design.

Pacific TAPPI to Meet

The Pacific Section of the Technical Association of the Pulp and Paper Industry will be held at the Hotel Monticello, Longview, Wash., May 5 and 6, 1933.

This will be a joint meeting with the Oregon Section of the American Chemical Society.

H. R. Heuer, assistant superintendent of the Pulp Division of the Weyerhaeuser Timber Company, will be general chairman of the meeting, and B. T. Larrabee will have charge of the ladies' entertainment. A large attendance is expected.

Correction

On page 37, column 2, line 19 of the Paper Trade Journal of March 23, 1933 the words "inversely proportional" should have read "directly proportional" (Process Steam and Purchased Power by J. F. Gaskill).

Synchronous Motor Control*

By D. R. Shoults[1]

Abstract

In the paper "Synchronous Motors in the Paper Industry," presented at the 1931 meeting of the Technical Association of the Pulp and Paper Industry, the writer described the increasing application of synchronous motors to the medium size and large machines used in the industry.

It was there pointed out that this increased use of synchronous motors was due to a number of causes; the increasing size of power systems with consequent allowance of increased starting currents; the modification in design of the synchronous motors, providing sturdiness and reliability in the motors essential when operated under adverse conditions; and, lastly, modification in the methods of automatically controlling the synchronous motors so that all operating contingencies are provided for and the motors enabled to carry their load within the limits of their capacity, under all possible operating conditions. The present paper is devoted to a discussion of some of the features of the present day synchronous motor control and the provision it makes for the protection of the motor against adverse operating conditions and how the control enables the motor to drive its load with the minimum of disturbances or shut-downs.

Introduction

The present day synchronous motor is really a combination of two machines; first, a squirrel cage induction motor of an extremely sturdy design, with a torque characteristic most favorably adapted to starting and accelerating the particular load to which the motor is connected. It is usually adapted for full voltage starting. In addition, the motor is also a synchronous machine whose characteristics of constant speed, power factor correction and high efficiency are more or less generally known.

Although the design of the induction motor characteristics may somewhat influence the design of the synchronous characteristics, the two sets of characteristics, that is, the induction and synchronous, are to a very great extent independent of one another. Thus, with identical synchronous characteristics, a given machine may be adapted to deliver a high starting torque and a relatively low pull-in torque or, conversely, a relatively low starting torque and a high pull-in torque. It is because of this feature that most of the recent advances in synchronous motor control application have been made in full recognition of the "dual personality" of the synchronous motor.

It is the function of the control to see that the maximum possible benefit is derived from the induction motor operation and that proper provision is made for beginning synchronous operation when conditions permit. Provision is also to be made to revert to induction motor operation when synchronous operation is impossible, at all times fully protecting the motor.

Function of Motor Controllers

Chronologically expressed, the functions of synchronous motor controllers are; to connect the stator windings to the source of power, providing either for full voltage starting or for some method of modifying this voltage, such as an auto transformer, part winding, or increment starting: allow the motor to properly accelerate the load; and at the proper time, when acceleration is completed on the induction motor characteristics, to apply field to the motor and provide for synchronous operation. If, during synchronous operation the motor should be pulled out of step, due to any cause, such as overload or undervoltage, the field excitation should be removed from the motor so that full advantage of the induction motor characteristics may be taken. If field is not removed, a negative torque will be developed in the motor, due to generator action, with consequent loss of accelerating torque and accompanying high pulsations in the line current. If the motor is unable to re-accelerate the load to the proper speed for re-synchronizing, it should be removed from the line before any damage, from overheating, is done to either the stator or squirrel cage winding.

An additional provision of operation that is frequently desired is the feature of time delay undervoltage protection. Inasmuch as the majority of the voltage dips which occur are of a duration of less than one second, it is advisable to provide for continued operation through these voltage dips. The motor will not have stopped rotating, or, in most cases, will not have slowed down appreciably during a voltage dip, of this length of time, even though the voltage has disappeared completely. If power is immediately reapplied to the motor, it will, in most cases, be able to re-accelerate and synchronize without a shut-down or an interruption of the process in the driven machine.

To illustrate the foregoing points, the following description of the methods of accomplishing the results as used in the General Electric Company's synchronous motor controllers may prove of interest.

The point of primary importance in any synchronous motor controller is the method used to determine the point at which induction motor operation is to cease and synchronous motor operation is to begin. If the synchronous motor is carrying appreciable load as it accelerates on its induction motor characteristics, it will not be able to accelerate completely to synchronous speed, the final speed reached before field is applied being comparable with the full load operating speed of a corresponding induction motor; that is, with a slip varying from 2 to 5 per cent.

After field excitation has been applied, the motor must almost immediately accelerate the synchronous speed and then continue to run at this speed. With the motor connected to its load and with its particular inertia or WR^2, there is a definite speed below which the motor cannot be synchronized by applying field excitation. It is thus necessary to be sure that the motor has accelerated above this speed due to its induction motor torque, before field excitation is applied. To accomplish this, the General Electric Company obtains an indication of the slip speed of the motor from the induced current in the field discharge circuit.

It is a well known fact that the frequency of the induced current in the field discharge circuit of a synchronous motor is directly proportional to the slip speed. That is, with a 60 cycle motor, the frequency is 60 cycles at standstill and, at 95 per cent speed, is 5 per cent of 60 cycles or 3 cycles per second. At 96 per cent, the slip

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry New York, N. Y., February 13-16, 1933.
Contribution of the TAPPI Heat and Power Committee.
[1] Industrial Engineering Dept., General Electric Company, Schenectady, N. Y.

frequency is 2.4 cycles per second or an increase of 25 per cent in slip frequency for 1 per cent reduction in speed. Thus, the indication obtained from slip frequency is a very accurate and sensitive indication of the motor speed.

In the controller, a portion of the current in the field discharge circuit flows through a half wave copper oxide rectifier and the coil of a magnetic delay dropout relay. Due to the action of the rectifier, the current through this circuit is unidirectional, but pulsating, one pulsation being obtained for each slip cycle. Between the pulsation there is no current flowing in the circuit but with the high slip frequency, with a short time between impulses, the relay is held closed by its definite time characteristic. As the time between pulsations is lengthened, due to the slip frequency decreasing, a point is finally reached where the relay may drop between pulsations, thus giving a definite indication of slip speed and an impulse to apply field.

It should be noted that this relay functions in response to the frequency in the circuit and that voltage variations in the primary circuit, which are reflected as current variations in the rotor winding, do not affect the operation of this relay. With the field application controlled by such a device, it is certain that field will not be applied unless the motor is at a speed from which it can be pulled into step by the application of field and it is also certain that at the first practical instant after the motor reaches this speed that field will be applied.

Effect on Power Factor

Field having been applied and synchronous operation obtained, it is next necessary to be sure that reversion to induction motor operation is made in case synchronous operation is no longer possible. During synchronous operation, the motor always rotates at a constant average speed proportional to line frequency. Increase in load on the motor causes the rotor to become displaced slightly, in phase position, behind the rotating field produced in the stator winding, at the same time producing a change in power factor of the motor in the lagging direction. At rated load, the power factor of the motor may be either one of the common values, 0.8 or unity. Assuming unity power factor at rated load, any overload causes the motor to operate at lagging power factor; with an 0.8 p.f. motor the power factor first drops to unity and, as the overload increases, then becomes lagging. As more and more load is applied, the rotor lags behind in phase position, developing more and more torque, until a position is

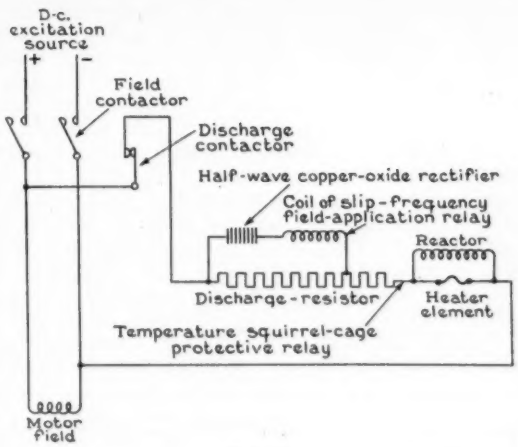


FIG. 1

Connection diagram of field circuit of GE Synchronous motor controller.

reached where a further lag in phase position does not result in an increase in torque. The rotor then slows down rapidly and the motor has pulled out of step. It is important that any device used to detect this condition be certain in its action, even with considerable voltage variation of the primary source of power, and that it allow the motor to develop its maximum torque before field excitation is removed but that field be removed the first practical instant after the maximum torque point is passed.

The one feature of the operation which is most critically influenced by the motor as it pulls out of step is the power factor of the current, taken from the line. The power factor of the motor when it is developing its maximum torque varies between 0.7 lagging and near unity. As the motor is pulled out of step and the rotor falls behinds its maximum torque position, the power factor rapidly changes from the pull-out value to a value which may approach .2 or .3 lagging. The magnitude of the armature current, taken by the motor from the line during this phenomena, varies only slightly from the maximum torque point to the greatest value obtained after the motor is out of step. The critical indication obtained from the power factor is given because of the fact that while this current does not vary greatly in magnitude, it does vary widely in phase angle.

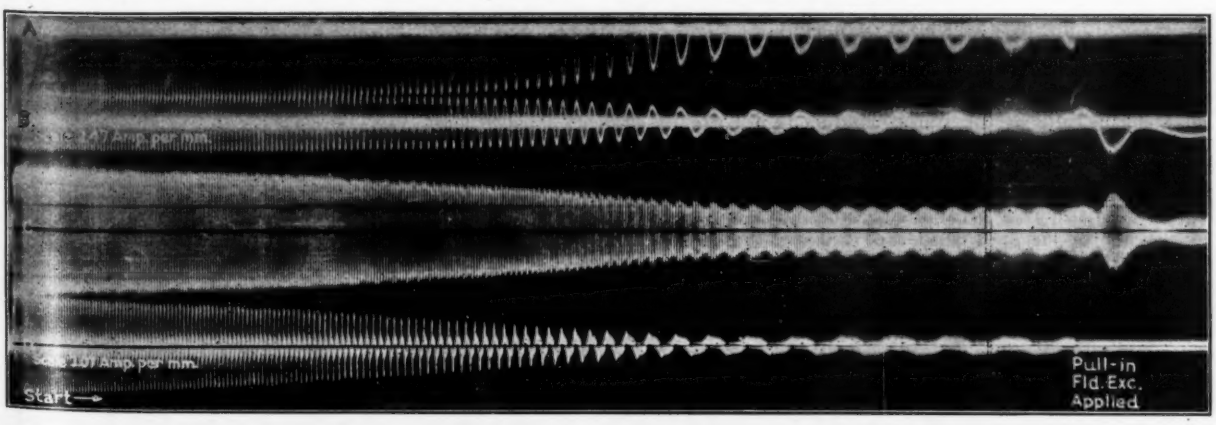
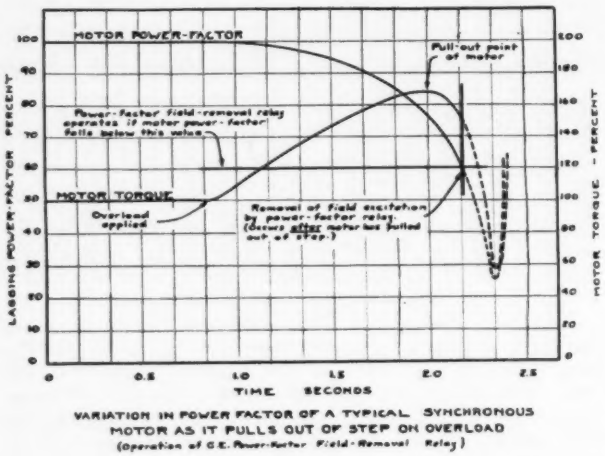


FIG. 2

Oscillogram of the currents flowing through the control devices of a G. E. synchronous motor controller during the starting period. A. Current through coil of Slip-Frequency Field-Application Relay—the relay operates on the variation in time intervals between successive half-cycles as the motor approaches synchronous speed. B. Total current flowing through field circuit. C. Line current. D. Current in heater element of Temperature Squirrel-Cage Protective Relay—the variation of this current with motor speed results in a tripping characteristic which follows the heating characteristic of the squirrel-cage winding.

The General Electric power factor field removal relay was designed particularly to meet the above condition. Its tripping characteristic is such that it cannot possibly be tripped by any normal operation of the motor while in synchronism, but that it is surely tripped by operation out of synchronism with field applied. The construction of this device is based on the eddy current principle, used variously in electric phonograph motors, wattmeters, phase failure and phase rotation meters. One set of coils in the relay is energized from the potential of the power supply while another winding is energized from the current taken by one phase of the motor. Between the two sets of magnet structures is supported a thin aluminum vane which, under the given condition of current and power factor, is caused to move, thus actuating its control contacts to cause the field excitation to be removed from the motor. After excitation is removed, the motor is then


MOTOR POWER-FACTOR
Pull-out point of motor
Power-factor field-removal relay operates if motor power-factor falls below this value
MOTOR TORQUE
Overload applied
Removal of field excitation by power-factor relay (occurs after motor has pulled out of step.)
LAGGING POWER-FACTOR - PERCENT
MOTOR TORQUE - PERCENT
TIME SECONDS

VARIATION IN POWER FACTOR OF A TYPICAL SYNCHRONOUS MOTOR AS IT PULLS OUT OF STEP ON OVERLOAD
(Operation of G.E. Power-factor Field-Removal Relay)

FIG. 3

enabled to operate to its best advantage on its induction motor characteristic curve, and if conditions of the load and power supply are such as to enable it to do so, it will reaccelerate to the proper speed for synchronizing where the field application relay will again apply field. If the motor is not able to accelerate to this speed, it may continue to run at some sub-synchronous speed or, under extreme conditions, may be stalled completely.

The current taken by the stator winding of the motor does not vary greatly from the standstill condition to the operation as an induction motor at 90 or 95 per cent. Thus the heating of the stator winding is not greatly influenced by the rotational speed of the rotor. The heating of the squirrel cage winding in the rotor is, however, greatly influenced by the slip speed, inasmuch as the heating at standstill is a great many times greater than it is near synchronous speed, due to the fact that at standstill almost the complete energy taken from the line is absorbed in the squirrel cage winding while at speeds just below synchronism the energy is mainly absorbed by the load connected to the motor. Where a synchronous motor is applied under conditions requiring long periods of acceleration or where there is any likelihood of the motor being completely stalled under some starting or running condition; protection should be provided so that the motor may be quickly tripped off the line. This protective method must, however, permit the motor to accelerate the maximum inertia which it is capable of accelerating.

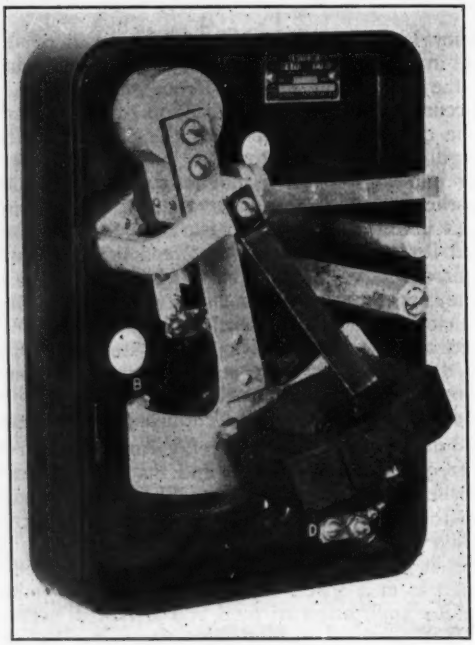


FIG. 4
GE Power factor field removal relay.

Thermal Overload Relay

The General Electric Company controllers provide this protection by a thermal overload relay connected in the field discharge circuit. During the starting period the current in this field discharge circuit is roughly proportional to the current taken by the stator winding from the line so that to obtain the protection required at the stalled condition, it is necessary to emphasize this condition in some manner. This is done by shunting the heater element of the thermal overload relay by a reactor. At the stalled condition, where the frequency in the rotor circuit is essentially line frequency, the current taken by this reactor is negligible, all of the current then flowing through the heater element. The thermal relay is set to trip in a time short enough to protect a stalled motor. As the speed increases and the frequency decreases in this circuit, the reactor shunts more and more current from the heater element so that at low slip speeds a considerable portion of the current is passed through the reactor shunt, and considerably lengthening the tripping time of the relay. Thus the thermal overload relay may be set to trip in a very few seconds at standstill and still permit the motor to oper-

Relative Heating of Stator and Rotor Windings of a 200 Hp.-0.8 P.F.-267 Rpm. Chipper Motor when Operating as Induction Motor

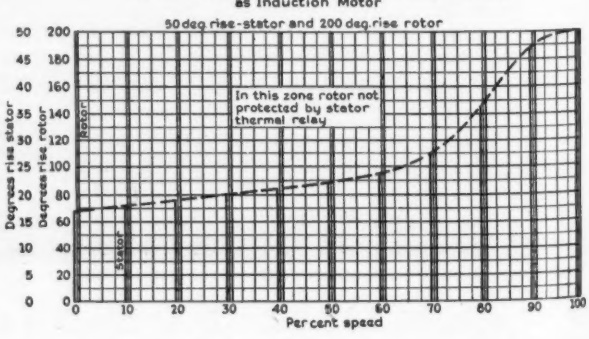
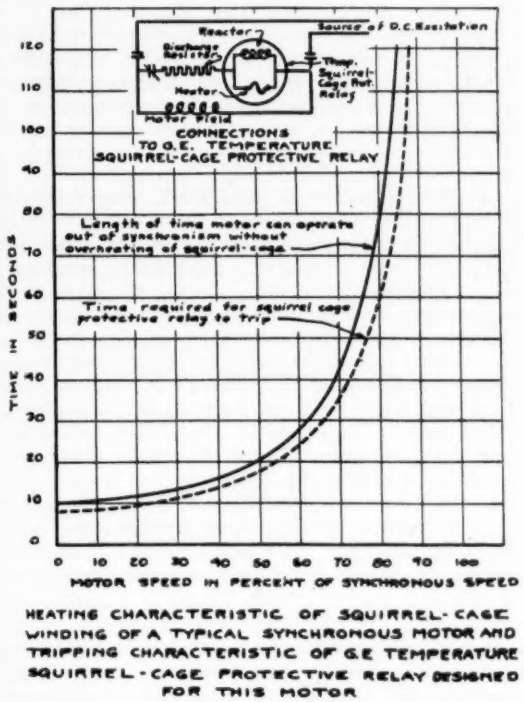

50 deg rise-stator and 200 deg rise rotor
In this zone rotor not protected by stator thermal relay
Rotor
Stator
Degrees rise stator
Degrees rise rotor
Per cent speed

FIG. 5

ate for a considerable time at 50 per cent speed or above without tripping.

The heating of the stator is determined largely by the current drawn from the line so that it is protected by the conventional type of thermal, inverse time relay. In application, one relay is used mounting three heater elements, two for the stator and one for the squirrel cage protection.


Reactor
Source of D.C. Excitation
Discharge Resistor
Thermal Squirrel-Cage Prot. Relay
Heater
Motor Field
CONNECTIONS TO G.E. TEMPERATURE SQUIRREL-CAGE PROTECTIVE RELAY
Length of time motor can operate out of synchronism without overheating of squirrel-cage
Time required for squirrel cage protective relay to trip
SECONDS IN TIME
MOTOR SPEED IN PERCENT OF SYNCHRONOUS SPEED
0 10 20 30 40 50 60 70 80 90 100
0 10 20 30 40 50 60 70 80 90 100 110 120

HEATING CHARACTERISTIC OF SQUIRREL-CAGE WINDING OF A TYPICAL SYNCHRONOUS MOTOR AND TRIPPING CHARACTERISTIC OF G.E TEMPERATURE SQUIRREL-CAGE PROTECTIVE RELAY DESIGNED FOR THIS MOTOR

FIG. 6

In the use of reduced voltage starting or other methods of reducing torque and current at starting, such as increment starting with resistance in the primary circuit or part winding starting, the control must be arranged to energize the winding at full voltage or to energize the complete winding, in order to complete the acceleration. The conditions for this transfer are somewhat different than for the transfer from induction to synchronous operation when field is applied. Thus, for the latter transfer it is absolutely necessary that the motors shall have reached a certain definite speed whereas the factor governing the transfer from reduced voltage to full voltage is that the motor shall have accelerated as far as it eventually will on the starting connection. Thus, under varying conditions of load or voltage a motor may be enabled to accelerate to different speeds on the starting connection. An accurate time delay relay to govern the length of time the motor operates on the starting connection definitely allows the motor to reach its maximum possible speed on this connection before making a throw-over. Thus it is always assured that the throw-over to full voltage will be made even under extreme conditions of load. In choosing this method of control for the General Electric Company controllers, it was felt that the starting sequence would thus always be accomplished with a minimum disturbance to the line. Inasmuch as reduced voltage starting is usually adopted because of the necessity of reducing the current drawn from the line, this factor is of first importance. As previously mentioned, the current drawn from the line with full voltage applied does not vary greatly until the motor approaches close to synchronous speed. Thus if the throw-over from reduced to full voltage is made too early in the starting cycle, the main benefit of the reduced voltage starting or reduced torque starting may have been lost.

Chipper and Jordan Drives

It is felt that improved methods of synchronous motor control are particularly of interest to the paper industry as some of the applications of synchronous motors in that industry are particularly severe. The growing application of synchronous motors to chippers requires the ultimate in performance of both the synchronous motor and its control. The accelerating requirements are severe, due to the high inertia of the chipper disc. The pull-in requirements are exacting for the same reason inasmuch as the motor must accelerate near to synchronous speed before field is applied so that the motor may surely be pulled into step. High peak loads are frequent, which require that the motor shall be enabled to resynchronize if pulled out of step, due to a combination of overload and undervoltage, and require also that the motor be protected fully against a stalled condition resulting from an extreme overload which the motor is not able to carry on its squirrel cage winding.

Jordan motors are usually adapted for full voltage starting, and, as they are usually started light, do not have starting torques equal to the full load running torque. Thus, if the motor is pulled out of step or is started with the Jordan plugged, the squirrel cage windings may be harmed by the motor being stalled for a sufficient length of time to enable the thermal overload relay, protecting the stator, to trip. Thus the stalled rotor protection is a particularly valuable feature here where the control is likely to be remote from the motor.

Continuity of operation of all the drives using synchronous motors is an essential feature, so that time delay undervoltage and ability to resynchronize is of prime importance in paper mill applications. Increasing attention paid to these features will be paid for many times over in the lessening of the interruptions to production.

Paper Testing Committee Report*

General Status of Activities

The development of test methods for ink resistance of printing papers, chemical analysis, water resistance and microscopical characteristics was continued by the subcommittees dealing with these subjects. The sub-committee on grease resistance was inactive, due to some adverse circumstances that affected the chairman, but it is believed that present arrangements will insure the carrying on of this important study to a successful conclusion. New subcommittees for physical tests and testing resistance of soap wrapping paper to discoloration were formed and made progress.

Six tentative methods were completed by the committee. Of these, methods for alpha cellulose, copper number, and total acidity were published in March, 1932, and methods for ink absorption of blotting paper, absorption of water

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., February 13-16, 1933.

for bibulous papers, and water resistance were published in November, 1932. The completed work now consists of 28 official methods and six tentative methods.

Assistance was given the association secretary in the preparation of the association manual of standards, and as usual, in replying to many inquiries received by him dealing with paper testing. The committee has the preparation of a revised edition of the TAPPI publication, "Paper Testing Methods," under way and any suggestions as to changes or additions will be gratefully received by the chairman.

Following are some details of the committee activities and related matters.

Chemical Methods

P. F. Wehmer, chairman of the sub-committee on chemical methods will report in the sectional meeting on studies of the methods for active sulphur, resins, iron, and pH. As amount of resin is now quite commonly specified in paper purchase specifications, the TAPPI test method has received considerable attention, and questions relative to the accuracy of the method have been raised. In respect to iron, the presence of fixed iron such as occurs in paper fillers presents some complication, and it seems that the test procedure selected should be limited to determination of unfixed or active iron only. A simple acid extraction applied directly to paper has been suggested for obtaining the active iron quantitatively. Considerable attention has been given jointly by the paper and pulp testing committees to means of bringing the respective tentative methods for alpha cellulose into agreement, and it is believed that the essential differences will ultimately be eliminated. It is understood that this matter will be thoroughly discussed in the sectional meeting on pulp testing, and therefore will not be further dwelt on here. Some revision of the tentative method for copper number of paper is necessary to provide for higher values. The amount of chemicals used in the present method are sufficient for a maximum copper number of about 7 but some papers exceed this figure. It is believed that the alpha cellulose method should be revised to include making corrections for lignin in the paper and in the alpha cellulose residue, in testing highly lignified papers. This would extend its scope to cover all classes of papers.

T. L. Crossley, chairman, will report in the sectional meeting, the progress made by his sub-committee in developing a test for resistance to discoloration of soap wrapping paper by the alkali in soap.

Physical Methods

The work of the sub-committee on physical methods has taken on an international scope, as through the wide acquaintance of the chairman James d'A. Clark, with foreign technologists, their active participation has been secured. With use of the official physical testing methods and the development of new instruments for applying some of them, ways in which most of them can be improved have come to light. Many helpful suggestions in this respect, which will be discussed in the sectional meeting on paper testing by Mr. Clark, have been received in respect to the methods for sampling, conditioning, substance, thickness, bursting strength, tearing strength, tensile strength, stretch, and folding endurance.

Permeability

Permeability of papers to liquids and vapors continues to hold unabated interest, owing to the importance of such properties in the service requirements of nearly all classes of papers. Relative to inking properties of printing papers, B. L. Wehmhoff will report, in the sectional meeting on paper testing, some results of research at the Government Printing Office on the Bekk smoothness tester, porosity, oil absorption, and study of ink absorption by means of cross-section photomicrographs. P. F. Codwise reports that the returns from the members of his sub-committee on their round-robin testing of the water resistance of heavy papers, have been delayed due to the generally depressed state of affairs, but that progress is being made. In cooperation with the committee, Messrs. Allen Abrams and W. A. Chilson are making some further study of their proposed method for measuring vapor transmission through papers, in the direction of adding some desirable refinements.

Microscopical Testing

An active sub-committee on microscopical testing has been formed by John B. Calkin, chairman. It has made good progress in the study of use of weight factors in fiber analysis, although the complicated nature of this problem necessitates considerable time for its final solution. The preparation of test samples is slow and tedious, as every precaution is being taken to have the fiber mixes accurate, as well as representative of possible factors such as variations in source and in pulp and paper-making operations. Mr. Calkin will discuss this work and also other problems in fiber analysis that are being considered.

B. W. Scribner, Chairman
Bureau of Standards, Washington, D. C.

Automatic Digester Control *

James Rogers II [1]

Abstract

A description of the automatic digester control system installed at the mill of J. & J. Rogers, Ausable Forks, N. Y. The introduction of chrome nickel alloys made this system possible and it is now possible to control the temperature and pressure within the sulphite digester during the cooking periods.

Every papermaker knows that the most important item in the production of quality paper is uniform pulp. And every sulphite superintendent knows that the most important step in the manufacture of uniform pulp is the cooking. Up until recently, this has been entirely an art, wholly dependent upon the carefulness of an individual or individuals. Given uniform chips and perfect acid a cook can turn out the best of pulp or a mess of useless trash, depending on his experience and care. This most important phase has been almost 100 per cent dependent upon the human element and yet since it is a chemical reaction following a set schedule, with only two external variables, it should lend itself to a very simple automatic control.

Several attempts to control the cooking process automatically have been made, but these have been frustrated by the lack of a metal which would withstand the attack of relief liquors and gases. Chrome-nickel alloys made

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry New York, N. Y., February 13-16, 1933.
Contribution of the TAPPI and Pulping Committee.

[1] Member TAPPI, assistant superintendent, J. & J. Rogers Company, Ausable Forks, N. Y.

possible apparatus which can be used in this automatic control, and it merely remained to work out the kinks. The Tycos digester control recently developed by the Taylor Instrument Companies has placed a tool in the hands of the cook which eases his work, does what is impossible for him to do unaided and brings his art to its perfection.

Control of Temperature and Pressure

The two variables to be controlled are pressure and temperature. With the Tycos instrument, the pressure is controlled by the steam inlet valve, guided by a cam. The temperature is controlled by the relief valve, guided by a second cam in conjunction with a thermometer bulb placed as near to the relief outlet as is conveniently possible. This location is chosen as giving the temperature bulb the most sensitive reaction to change within the digester. Rapid circulation and reaction may be taking place within the center of a digester, with little or none at one side. A bulb in the side of the digester would, therefore, be deceptive. However, any circulation and reaction causes the evolution of gases which immediately flow to the relief valve, raising the temperature in its vicinity. With the Tycos control, this means a partial closing of the relief valve, until the excess circulation and reaction has calmed down and the heat become distributed throughout the entire contents. As a result, bored or part cooks are eliminated. It takes but a minute or so for even a slight change on the steam valve to result in a temperature change at the relief valve.

All during the cooking cycle there are two pressures present in the digester—one due to the evolved SO_2 gas; the other to the steam,—from the original acid which is being heated. These added together give the digester pressure as shown on the pressure dial. By the laws of chemistry, for any given temperature, and pressure, the acid can be of only one strength. Also, at any temperature, the steam from the heated water can have only one pressure. This is what makes automatic control possible, and automatic cooks more uniform than hand-controlled. For, regardless of the original strength of the acid, when a given temperature and pressure are reached, the conditions inside the digester are the same as in the preceding cook at that point, provided, of course, that the same schedule has been used to reach that point. Only automatic control can give the same pressure—temperature—time—cycles, cook after cook.

Progress of a Cook

Let us follow through an imaginary cook. Say the digester is filled, allowed to soak for one hour, pressure raised to 80 pounds per square inch in the next two hours, and held constant there until the last hour, when it is dropped and the digester finally blown at 35 pounds per square inch so that at the end of the third hour the temperature should be 110 deg. C. to start the digestion cycle, and raised 4 deg. C. each hour to a maximum of 146 deg. C. at the end of the twelfth hour, after which comes the "blow-down".

Now to compare the two methods, after soaking, the digester is steamed by hand. The acid is a little stronger than usual so the pressure builds up a little more rapidly due to the excess gas evolved as the acid is heated to a given temperature. The cook operating by hand, shuts off a little on the steam to avoid having the digester up to pressure too soon. The result is that the digester is up to pressure at a lower temperature than usual. There is a considerable accumulation of gas, and as soon as the relief valve is cracked, this rushes out, dropping the pressure precipitately, and causing an inrush of steam and consequent over-shooting of the temperature on the start—the most critical time in the cook.

Automatic Control

Now to follow the same cook automatically—as the steam enters, the pressure starts to rise rapidly as before, due to the excess gas. But instead of the steam being slacked back to control this, the temperature cam calls for more heat, cracks the relief, and the excess gas escapes. The pressure and temperature increase together, so that when the digester is up to pressure, the temperature is at 110 deg. C. or any other desired point and the digestion process is ready to start smoothly and uniformly. Note carefully that this process need not start as soon as the steam is turned on. The temperature cam can be so set that the excess gas can be carried in the digester any length of time desired. The important point is that 110 deg. F. is reached not before and not after, but exactly when the digestion cycle should start. This is practically impossible with hand control. To accomplish it, the cook would have to be in constant attendance at the relief valve, with his eye on the thermometer to prevent the escape of too much gas and over-heating. At best, he would only approximate the results obtained automatically.

Most authorities are agreed that the most important part of the digestion is the first part—reaching and leaving 110 deg. C. During this period an operator working with hand control must be constantly on the alert for a fraction of a turn on the relief valve may make several degrees temperature difference in a very few minutes. At best, he must divide his attention between two or more digesters and give each periodic attention. The automatic is on watch each fraction of a second. The result is a smooth constant temperature rise, each cook exactly the same as the cook before, providing proper penetration has been allowed, and sufficient acid maintained in the digester at all times.

Some may wonder why temperature is controlled by the relief, and pressure by steam—the reverse of some other control system. This is merely following the practice of most cooks in the hand method. Furthermore, it works to perfection during the blowing down period. Of course the purpose of the blow-down is to conserve steam and recover the maximum amount of gas. When the end of the twelfth hour in our imaginary cycle is reached, the cam shuts off all steam immediately (or slowly, if so desired.) But the temperature cam calls for more heat, and the relief valve opens wide. The pressure drops rapidly until 35 pounds is reached, when the steam valve begins to open, holding the pressure there and driving off the last of the gases. All the cook needs to watch for is the end-point, and when it comes, close the hand valves and open the blow-off valve.

The Tycos control is flexible in the extreme. After the digester is filled and the cams set at zero, the manual valves are opened wide, both on steam inlet and top relief. The whole can remain thus for an indefinite period, until the cook is ready to start. The operator then merely twists a pin and from then on watches to see that all is running smoothly. At a predetermined time, if desired, a trip causes the temperature control to start functioning, and the excess gas is then relieved. Until this point no gas escapes regardless of the temperature. A twist of the aforementioned pin at any time will cause motion of the cams to cease. If for some reason manual control is desired, the mere turning of a pet-cock which shuts off the air supply to the controller, causes both steam and relief

to open wide and remain open, allowing the unhampered use of the hand valves.

Any man of average intelligence can change a cam if the cycle is to be altered, and cams for any possible pressure or temperature cycle can be cut in advance and kept in readiness for a change in cooking time or method.

The results are excellent. Due to the improved conditions at the first of the cook, there are less screenings and rejects. Cook after cook will have the same strength and bleachability characteristics as the one before it. And last but not least, plugging of the strainer is practically eliminated. This is probably due to the fact that the relief valve seldom if ever closes tightly and never opens abruptly.

Taken all in all, automatic digester control should be seriously considered by anyone making quality pulps. In time, its use will probably be universal.

Abstracts and Bibliography Committee Report For 1932*

The following is the report of the Committee on Abstracts and Bibliography of the Technical Association of the Pulp and Paper Industry for the year 1932.

Abstracts

During the past year there have been published 140 pages of abstracts of periodical literature and patents, as compared with 171 pages in 1931, 153.5 pages in 1930, 71 pages in 1929, 66 pages in 1928, 65 pages in 1927, 107 pages in 1926, 77 pages in 1925 and 78 pages in 1924.

Because of the special effort made last year to bring the publication of the abstracts up to date, the smaller number of pages this year has enabled the committee to publish abstracts of practically all the periodical literature and patents which have appeared during the past year. As emphasized last year, it is felt that the prompt appearance of abstracts is very desirable and through the cooperation of the PAPER TRADE JOURNAL and Secretary Macdonald it is anticipated that prompt publication will be continued.

A very important phase of this work is the very efficient service of A. Papineau-Couture and J. F. Ohlson, who supply practically all of the abstracts, and the chairman, in the name of the TAPPI, expresses his appreciation of their continuous and faithful services.

Bibliography

As mentioned in last year's report, the PAPER TRADE JOURNAL found it impossible to publish the annual Bibliography of Paper Making in the convention number for 1932. However, this probably proved a blessing in disguise, for the association found means whereby the bibliography was issued as a separate publication in a form similar to the chairman's "Bibliography of Paper Making, 1900-1928." In addition to the Bibliography, the patents for 1932 were also included. This made a book of 175 pages and was distributed to all members of the TAPPI.

The bibliography for 1932 has been prepared and is now in the hands of the printer. It is not surprising that this will make a smaller book than in 1931, for the various paper trade journals are not publishing as much material as in previous years.

The suggestion has been made that the bibliographies for 1928-1930 should be reissued in the same form as that for 1931. It is believed, however, that since these have been published in Technical Association Papers, it will be better to plan for the first supplement to the "Bibliography of Paper Making" to appear in 1936 and to cover the period 1928-1935. After that, supplements might appear every five years. Since work on the first supplement will be started in the near future, any suggestions will be gratefully received.

Patents

As mentioned above, the collected list of United States patents on paper making and related subjects for 1931, arranged according to the Patent Office classification, appeared with the bibliography for 1931, as a separate publication. During the past year quarterly chronological lists appeared in the PAPER TRADE JOURNAL for February 25, May 26, August 4 and October 13. These averaged three printed pages.

The classified list for 1932 is now in the hands of the printer.

Indexes

The indexes for Volumes 93 and 94 of the Technical Section appeared in the January 21 and July 28 issues, respectively, of the PAPER TRADE JOURNAL. The index for Volume 95 has been prepared and will appear early in 1933. Again suggestions are desired from those who use these detailed indexes.

Requests

During the year 1932 a considerable number of requests for photostats of periodical articles were received by the chairman and, in practically every case, the material was furnished.

It must again be emphasized that patents cannot be supplied. Copies of all United States patents can be secured through the U. S. Patent Office, for ten cents ($0.10) each.

Details regarding the purchase of foreign patents were printed in last year's report (PAPER TRADE JOURNAL, April 7, 1932, p. 39). Photostat copies of most foreign patents may be secured through the U. S. Patent Office. It is necessary that the cost of the photostat be ascertained in advance, as all orders must be accompanied by remittance. However, if desired, a sufficient sum may be sent with the request, and the excess over the actual cost will be refunded with the photostat. In most cases one dollar ($1.00) will cover the cost of any photostat.

Again the chairman desires to state that he will be glad to receive suggestions for possible compilations and for methods of improving and extending present activities.

CLARENCE J. WEST, Chairman,
National Research Council, Washington, D. C.

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry New York, N. Y., February 13-16, 1933.

The Cameron-Dockery Proposal for Utilization of the Whole Cotton Plant as a Source of Cellulose for Papermaking*

By Harold R. Murdock[1]

Abstract

Messrs. Cameron and Dockery of the University of North Carolina have proposed a method of cotton planting and harvesting that will increase the yield per acre.

Experiments have been made to determine the quality of the cellulose obtained from the entire cotton plant as so grown when cooked by common pulping processes.

The results offer but little encouragement relative to the cellulose in the stalks. A number of suggestions are made for preparing the harvested material for cooking.

Introduction

There is at least one problem which will always remain with pulp research organizations, no matter how intensively it is pursued or how successfully one seemingly might have solved it. This problem is the search for new papermaking materials. Every stage of success only opens up new horizons, with the rainbow's end still over the hill.

Not long ago, spruce was considered the only pulpwood source and difficulties in pulping other woods seemed insurmountable. Economic conditions, however, soon necessitated experimentation on other species; and gradually hemlock, aspens and pines became useful pulpwoods.

An interesting chapter in the search for new papermaking materials is found in the southern states. Here the desired woods such as spruce, were present in limited amounts, being found only in the mountains and usually at the higher elevations. Pines and the shorter fibered woods, such as chestnut, gums and poplars, while found abundantly, were too refractory when pulped by the then known pulping methods. The industry in general preferred to use the northern woods with which it was more familiar and was slow to appreciate the advantages of the southern woods. Research, however, soon showed that conditions of pulping could be attained which would permit the manufacture of good, bleachable pulp from southern woods, such as pine, chestnut, gums and poplars. As manufacture continued, advance in the art progressed, so that bleached pulps are now made that can compete with those high quality bleached pulps of northern mills. But still the search goes on for new papermaking materials.

The commercial utilization of cotton stalks has occupied the attention of investigators for a good many years. Up to the present, however, there has been no commercial application of these ideas, but the large tonnage of cotton stalks available continually invites the investigator to make further studies as economic conditions change. Each investigator approaches the subject differently because of the changed economic relationship of cellulosic materials at the time of his study.

High Yield Cellulose from Cotton

Recently, two men from The University of North Carolina, Professor Frank K. Cameron and Nicholas W. Dockery, brought attention to the fact that the cotton plant, if grown under certain conditions, might produce a high yield of cellulose per acre, which would compete favorably with wood pulp as a new material for rayon, paper and other industries using wood cellulose. They are concerned with the whole plant, excluding only the roots, not just the boll fiber which is the present source of one type of papermaking material, nor merely the cotton stalk. These men propose to sow the seed by broadcasting in the manner used in planting grain. By so doing, they hope to double the present yield of the plant per acre, eliminate the need for cultivation, and harvest the crop with the type of machinery usually used in reaping grain. The whole plant, with the bolls, and seeds, according to their plan, is then to be baled and shipped to a mill for chemical isolation of the cellulose by those methods now in use in the pulp industry. Interest in the Cameron-Dockery method has been widespread and The American Cotton Growers' Association appropriated funds to conduct growing experiments on rather extensive proportion.

The proposal of Messrs. Cameron and Dockery involves two stages of experimentation; first, it is necessary to show that the cotton plant can be grown and harvested as proposed; and second, it is necessary to work out the method of isolation of the cellulose from the whole plant. The first problem required quite an extensive study into such methods of planting as broadcasting the seed, drilling in close rows, and planting by the present methods. This was accompanied by a study of cultivation and selection of the proper type of seed to produce plants which will grow faster than the weeds so that the small cotton plants will not be smothered. Many other agricultural problems had to be attacked and Mr. Dockery's cotton plantation near Rockingham, N. C. was devoted to experimental production. While the experimental work has not been completed, Professor Cameron and Mr. Dockery believe that a gross yield of five thousand pounds of cellulose per acre can be obtained from good soil.

Assuming a practical solution of the growing of the plant, then what? Are present pulping methods going to be adequate for isolating the cellulose of the whole plant? Will the process permit salvaging the usual by-products of the cotton plant, such as cottonseed oil and meal? If not, what values will be obtained to compensate for this lost income? Many other such questions must be answered before obtaining a practical source of cellulose from the whole cotton plant.

A search of the literature shows that many investigators have considered cotton stalks as a raw material for papermaking. A study of this literature discloses that a

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., February 13-16, 1933.
Contribution of the TAPPI Alkaline Pulping Committee.
[1] Member TAPPI, director of research, Champion Fibre Co., Canton, N. C.

number of usually reliable experimentors believe cotton stalks to be of no practical use for the papermaker. (See, particularly, *(7), (8), (9)* and *(11).*)

Experimental Work

In order to carry out our experimental work, several bales of the whole cotton plant were obtained through the courtesy of Professor Cameron and pulped by the various processes common to the industry, at his request. In some cases the bolls were separated and pulped independently of the stalks and leaves. Also separate pulping experiments were conducted on the stalks and the leaves, as well as the experimental work on the whole cotton plant. Of a number of tests made, the following run is typical of the behavior of the whole cotton plant, when pulped by the soda process.

The whole plant was charged into a steam jacketed rotary digester, identical to those described by The Forest Products Laboratory (12); on a basis of 1100 grams of oven dry material. 300 grams of caustic soda was dissolved in 5167 cubic centimeters of water and added to the digester. The temperature was then allowed to increase during the first two hours to 344 deg. F., at which temperature the cook was continued for a further three hours. Under such conditions, wood chips of pine, chestnut, poplar, etc., would be pulped satisfactorily for papermaking. On emptying the digester it was apparent that some digestion had occurred, because of the dark color of the solution. The pulp was transferred to a screen and washed free of the dark-colored cooking liquor. The pulp obtained, while free of matter such as bark, hulls, etc., was a deep chocolate brown and even the originally white boll fiber was discolored badly. A yield of 38.2 per cent of pulp was obtained and 25 per cent of lime bleach was required to bleach this pulp to a white, suitable for a low grade sheet of paper. No cottonseed oil or meal was obtained because the seed had been destroyed by the chemical, so the cost of the operation must be borne solely by the pulp, which is only 38 per cent of the original plant, darker colored than a similar run of wood pulp and of fiber length varying from over thirty millimeters to less than one millimeter. In other words, if the whole plant cost should be $10.00 per ton, we would have to receive $26.40 per ton for the pulp, plus its cost of conversion, before making a profit, and the cellulose is no better than a first run linter cellulose, which costs about the same, and whose demand in the rayon and other industries has by no means exceeded the supply.

Experiments conducted by other alkaline methods, such as the sulphate schedules, rag cooking schedules, all gave results similar to the soda process above mentioned.

The sulphite process was also tried; and the following test is typical of this series. 489 grams of the whole cotton plant was digested by the usual type thirteen hour digestion used on pulping spruce wood. The combined lime base was 1.1 per cent and total SO_2 content was 4.9 per cent. A maximum temperature of 290 deg. F., was maintained during the last five hours of the cook, while the first eight hours consisted of a gradual temperature rise to 290 deg. F. On examining the pulp produced, the entire mass was of a mealy character. The long boll fibers, while not stained as in alkaline pulping, had been deteriorated and shortened in length to less than a wood fiber length. The essentially non-cellular portion of the plant, on the other hand, was but partially dissolved. We have destroyed the cellulose, therefore, before the bark and lignin bodies have become soluble. To those not familiar with pulping operations, it should be pointed out that we are trying to do what the pulp mills try to avoid doing; that is, pulp a heterogeneous mixture of cellulose, lignin and bark. In the sulphite process, it is necessary to take considerable care in removing bark from logs before chipping because of the refractory nature of the bark. It is reasonable to expect, therefore, such a condition as we have found in pulping the whole cotton plant by the sulphite process.

In view of these findings, however, there is no reason why we should abandon the idea of Messrs. Cameron and Dockery. These men have advanced the subject by showing the possibility of growing more cotton plants per acre than heretofore. The method of isolating the cellulose from this plant is the only part of the proposal which needs reconsideration. The writer suggests that inasmuch as the boll fiber is of spinnable quality, and for this reason commands a higher price than cellulose derivative cotton, and also in that the cottonseed is already utilized economically, consideration should be given to separating the whole cotton plant after harvesting, into the bolls and the stalk proper. This can be done probably by mechanical means, but inasmuch as cheap labor in the south is available, it is quite possible that if the whole plant were placed on a moving belt, the bolls could be picked from the stalks as it passes by the operators and the stalks permitted to pass along to a separate processing to recover the cellulose content,—if a modified pulping process can be found to permit economic operations. The separated bolls can then be processed as usual in a gin, to separate the long fibered cellulose from the seeds and the seeds passed to the oil mill operator for recovery of lint, oil and meal as is now done. By such a process it is quite likely that the boll fiber can be obtained at a cost lower than the present staple cotton, without the necessity of pulping the cotton stalks. So, while there appears to be little encouragement to be able to isolate the cellulose in cotton stalks, the evidence seems at least probable that a low cost long fiber cellulose of good quality can be obtained from cotton grown and harvested by the novel method of Messrs. Cameron and Dockery of North Carolina.

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Report from the State Testing Bureau for Materials, Berlin-Dahlen

New dyes introduced for differentiating between chemical and ground wood pulps, the particular advantage being that the preparation is stable and can be used as a standard An equation is given for converting the bursting strength of one area into another. Regarding the penetration of light, there is no linear function between the thickness of the paper and the amount of light passing through. Method for determining the wire side on heavy coated papers. Montan wax determination in the presence of rosin size. Methods for the determination of the degree of cooking of the pulp are discussed thoroughly. Alpha cellulose, copper number, resin determination, strength tests, are among the tests described for pulps.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING APRIL 1, 1933

CIGARETTE PAPER

American Tobacco Co., Pr. Roosevelt, Havre, 50 cs.; De Manduit Paper Corp., Pr. Roosevelt, Havre, 525 cs.; Champagne Paper Corp., Pr. Roosevelt, Havre, 20 cs.; Champagne Paper Corp., Champlain, Havre, 29 cs.; Standard Products Corp., Champlain, Havre, 59 cs.

WALL PAPER

R. F. Downing & Co., Pr. Jackson, Kobe, 17 bls.; J. E. Bernard & Co., Pr. Roosevelt, Hamburg, 2 bls.; F. A. Binder, Hamburg, Hamburg, 6 bls.

NEWS PRINT

Perkins Goodwin & Co., Pr. Roosevelt, Hamburg, 90 rolls; Jay Madden Corp., Pr. Roosevelt, Hamburg, 135 rolls; Jay Madden Corp., Scanstates Hango, 662 rolls; Lunham & Reeve, Inc., Scanstates, Hango, 170 rolls; A. S. Zabriskie, Scanstates, Hango, 45 rolls; Gilman Paper Co., Malmen, Gothenburg, 761 rolls; Brooklyn Times, Malmen, Gothenburg, 419 rolls; —— Hamburg, Hamburg, 20 rolls; Perkins Goodwin & Co., Hamburg, Hamburg, 246 rolls; Jay Madden Corp., Hamburg, Hamburg, 133 rolls; Brooklyn Times, Blankaholm, Norrkoeping, 420 rolls; Gilman Paper Co., Blankaholm, Norrkoeping, 869 rolls; Parsons & Whittemore, Inc., Blankaholm, Gothenburg, 38 rolls.

PRINTING PAPER

Japan Paper Co., Ausonia, Southampton, 1 cs.; —— Pr. Jackson, Kobe, 7 cs.; Phoenix Shipping Co., Hamburg, Hamburg, 4 cs.

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F. C. Strype, Black Eagle, Antwerp, 23 cs.; R. Wilson Paper Corp., Black Eagle, Antwerp, 2 cs.

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WRITING PAPER

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BOWL PAPER

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American Express Co., Scythia, Liverpool, 1 roll.

GUMMED PAPER

H. A. Wilson, Veendam, Rotterdam, 13 cs.; Heemsoth Bass & Co., Olympic, Southampton, 6 cs.

BRISTOL BOARDS

Devoe & Raynolds Co., Amer. Importer, London, 1 cs.

IVORY BOARDS

Safran & Glucksman, Inc., Veendam, Rotterdam, 5 bls.

CARD BOARD

Cheramy, Inc., Champlain, Havre, 25 cs.; P. Bauer Co. Inc., Blankaholm, Gothenburg, 121 bls.

STRAW BOARDS

H. Fuchs & Son, Veendam, Rotterdam, 200 pkgs.; American Paper Tubs Products Corp., Veendam, Rotterdam, 135 rolls.

MISCELLANEOUS PAPER

C. Steiner, Black Eagle, Antwerp, 11 cs.; F. C. Strype, Veendam, Rotterdam, 8 bls.; Walker Goulard Plehn Co., Veendam, Rotterdam, 3 bls.; Lewis & Conger, Champlain, Havre, 8 cs.; Keuffel & Esser Co., Hamburg, Hamburg, 42 cs., 28 rolls; Walker Goulard Plehn Co., Hamburg, Hamburg, 66 bls.; Wedeman Godknecht & Lally, Hamburg, Hamburg, 15 cs.; A. Brown & Bro., Hamburg, Hamburg, 2 cs.; Wilkinson Grey Inc., Blankaholm, Gothenburg, 55 bls, 24 rolls.

RAGS, BAGGINGS, ETC.

E. J. Keller Co. Inc., Black Eagle, —— 90 bls. bagging; S. Birkenstein & Sons, Navemar, Barcelona, 138 bls. rags; E. J. Keller Co. Inc., Collamer, —— 75 bls. new cuttings; Darmstadt Scott & Courtney, Francisco, Hull, 22 bls. new cuttings; —— Amer. Importer, London, 4 bls. rags; W. Steck & Co., Exarch, Genoa, 72 bls. rags; J. Cohen Son Co., Scythia, Liverpool, 18 bls. paper stock.

OLD ROPE

Banco Coml Italiane Trust Co., Veendam, Rotterdam, 50 coils.

CASEIN

D. C. Andrews & Co., Hamburg, Hamburg, 60 bags.

GLUE STOCK, ETC.

N. H. Lederer, Veendam, Rotterdam, 200 bags bone glue; ——Hamburg, Hamburg, 900 bags bone glue; —— Hamburg, Hamburg, 260 bags hide glue.

WOOD PULP

Castle & Overton, Inc., Black Tern, Rotterdam, 651 bls. wood pulp, 121 tons; Continental Bank Trust Co., Pr. Roosevelt, Hamburg, 335 bls. wood pulp; Lagerloef Trading Co., Scanstates, Hango, 336 bls. sulphite, 56 tons; —— Hamburg, Hamburg, 400 bls. wood pulp, 62 tons; Castle & Overton, Inc., Hamburg, Hamburg, 140 bls. wood pulp, 28 tons; Chase National Bank, Blankaholm, Gothenburg, 200 bls. sulphite.

WOOD PULP BOARDS

Heidelbach Ickelheimer & Co., Veendam, Rotterdam, 110 bls.

BOSTON IMPORTS

WEEK ENDING APRIL 1, 1933

Castle & Overton, Inc., Black Eagle, Antwerp, 2020 bls. wood pulp, 321 tons; —— Black Eagle, Antwerp, 101 coils old rope; G. F. Malcolm & Co., Scythia, Liverpool, 11 cs. tissue paper; F. S. Webster Co. Inc., Scythia, Liverpool, 6 cs. tissue paper; International Purchasing Co., Francisco, Hull, 84 coils old rope; International Purchasing Co., Scanstates, Copenhagen, 48 coils old rope; Worcester Post Co., Blankaholm, Norrkoeping, 193 rolls news print; Perkins Goodwin & Co., Blankaholm, Gothenburg, 2540 bls. kraft pulp; Perkins Goodwin & Co., Blankaholm, Gothenburg, 919 bls. sulphate; Perkins Goodwin & Co., Blankaholm, Gothenburg, 508 bls. sulphite; J. Andersen & Co., Blankaholm, Gothenburg, 1800 bls. sulphite; Stora Kopparberg Corp., Blankaholm, Gothenburg, 75 bls. chemical pulp; Chase National Bank, Blankaholm, Gothenburg, 800 bls. sulphite; Gottesman & Co. Inc., Blankaholm, Gothenburg, 460 bls. chemical pulp; Spaulding & Tewksbury, Blankaholm, Gothenburg, 51 bags wood flour; E. J. Keller Co. Inc., Clairton, —— 68 bls. bagging.

PHILADELPHIA IMPORTS

WEEK ENDING APRIL 1, 1933

Gilman Paper Co., Blankaholm, Norrkoeping, 544 bls. news print; The Borregaard Co., Inc., Blankaholm, Gothenburg, 176 rolls, 5 bls. paper; The Borregaard Co., Inc., Blankaholm, Gothenburg, 450 bls. chemical pulp; Johaneson Wales & Sparre, Inc., Blankaholm, Gothenburg, 150 bls. mechanical pulp; E. J. Keller Co., Inc., Lehigh, —— 341 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING APRIL 1, 1933

Stora Kopparberg Corp., Blankaholm, Gothenburg, 210 rolls news print; Perkins Goodwin & Co., Blankaholm, Gothenburg, 762 bls. kraft pulp; Chase National Bank, Blankaholm, Gothenburg, 200 bls. sulphite; Gottesman & Co. Inc., Blankaholm, Gothenburg, 375 bls. sulphite; Gottesman & Co. Inc., Blankaholm, Gothenburg, 310 bls. chemical pulp.

WILMINGTON IMPORTS

WEEK ENDING APRIL 1, 1933

Castle & Overton, Inc., Scanstates, Hango, 6493 bls. sulphite, 1298 tons.

Joins Miami Valley Coated Paper Co.

J. W. Boyle who entered the employ of the Miami Valley Coated Paper Company, of Franklin, Ohio recently as chemist has been appointed general superintendent of this company. Mr. Boyle brings to his new connection a wide experience in paper coating, having learned the rudiments of the trade with the old established firm of Smith & McLaurin, Renfrewshire, Scotland, where he started as a boy and afterwards was connected with such well known coating mills as the Clyde Paper Company, Rutherglen near Glasgow; John Collins, Ltd., Denny; A. M. Peebles & Son, Rishton, Lancashire and Geo. Stark & Sons, Glasgow.

When the Ritchie & Ramsey Company of Toronto, wanted a suitable man for their coating department, they selected Mr. Boyle from among a long list of applicants and to say that they made a wise choice is born out by their success in business, Mr. Boyle being in their employ for over ten years. When the consolidation of the Ritchie & Ramsey Company with the Lincoln Pulp and Paper Company and associated companies took place, Mr. Boyle decided to come to the United States and after having taken out his citizenship papers, he obtained a position with the Atlantic Gummed Paper Corporation to start up their new plant at Brooklyn, N. Y., and was afterwards connected with the Brown-Bridge Mills of Troy, Ohio.

Boston Paper Trade Happenings

BOSTON, Mass., April 3, 1933—The March-April number of "How," the publication of Tileston & Hollingsworth, edited by A. V. Howland, has been issued, the envelope bearing, as usual, the words, "Here's How." The issue notes that the epitome of the comment following the recent review and analysis of the Tileston & Hollingsworth 1933 Calendar was "The best thus far." The contents include the customary unusual articles of helpfulness to the printing trade. Among them is a story stressing the value of work along original lines and an article favoring the return to the two-cent stamp, which notes that the "three-cent postage is a flat failure." The number is printed on Vellum Offset white, and Crinoline Cover, gray.

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New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, April 5, 1933.

While demand for the various standard grades of paper has fallen off slightly, the local paper market continues buoyant. Sales forces of the leading paper organizations are conducting a strenuous campaign for orders and are generally optimistic over the outlook for the future. Quotations rule steady to firm.

There were no further developments in the news print paper market. Production in the United States, Canada and Newfoundland is being maintained in sufficient volume to meet current requirements. Stocks at the mills are about normal. The price situation is practically unchanged.

Steadiness prevails in the paper board market. An encouraging feature is the heavy demand for containers for the beer industry. Prices are well maintained. The fine paper market is more stable than for some time past. Sentiment is improving in the coarse paper market, especially in the kraft wrapping paper section.

Mechanical Pulp

The ground wood market is practically marking time. Operations in this country and abroad are generally keyed to consumption and there are no excessive accumulations. As a result, the statistical position of the industry is satisfactory. Prices are holding to previously quoted levels.

Chemical Pulp

Demand for both domestic and imported chemical pulp is fairly persistent, considering general business conditions. The contract movement is seasonal. Inquiries for future account are more numerous than of late. Prices are generally holding to schedule and shading is infrequent.

Old Rope and Bagging

The old rope market is fairly steady. Demand for both domestic and foreign old manila rope is moderately active. Small mixed rope is moving slowly. The bagging market is irregular. While gunny bagging is steady, scrap and roofing bagging is in light request. Prices remain unaltered.

Rags

No radical changes transpired in the domestic rag market. Paper mill demand for the various grades of cotton cuttings is restricted. Roofing grades are fairly active. Domestic rag quotations are nominal. The imported rag market is still affected by the uncertainty of foreign exchange.

Waste Paper

Board mill request for the lower grades of paper stock is well maintained. Strictly folded news and No. 1 mixed paper are steady to firm, with offerings rather limited. The better grades of waste paper are generally holding their own. Hard and soft white shavings are displaying strength. Old kraft machine compressed bales are in better demand.

Twine

With the approach of Easter and the usual seasonal expansion in demand for wrapping paper at this time of year, the local twine market continues to show signs of improvement. There are a number of inquiries around for future account, some of which should materialize into good orders. Prices are fairly steady.

World's Fair Paper Day

The Paper Foundation, Inc., has selected a tentative date for the observance of "Paper Day" at the forthcoming Century of Progress Exposition. September 1 has been selected although this date is, of course, subject to change. "Paper Day" will be built around the Paper exhibit and the individual exhibits of paper and allied concerns. Preliminary plans indicate that "Paper Day" will mark the culmination of a summer's sales contest participated in by manufacturers, jobbers and salesmen. Meanwhile, while these details are being worked out and made ready for submission to the entire industry, the Foundation is making rapid and gratifying progress in not only disposing of the much valued individual advertising exhibits but in securing financial support for the central exhibit itself. Phil Howard, president of the Foundation, which was incorporated, without profit, for the purpose of putting over the paper exhibit program and all of its ramifications, has been in Michigan during the past week in the interests of the Foundation. He reports a pleasing willingness on the part of the paper industry to discuss and enter into the paper industry program.

Orders for Beer Containers Increase

KALAMAZOO, Mich., April 3, 1933.—The box board race for case containers for beer bottles among the box board carton manufacturers in the middle West turned several very large orders for these cartons to the Eddy Paper Company at Three Rivers, Mich., last week, according to officials here in Kalamazoo. The U. S. Brewing Company and Val Blatz have already sent in large orders for immediate shipment and orders from other breweries are coming in daily. Representatives of the Eddy Company are negotiating with a number of other concerns to furnish cases for their products.

Paper Mill Employment

February employment figures for the paper and pulp industry were 72.5 compared with 72.2 for January and 77.7 for February of last year taking 1926 at 100 according to the Bureau of Labor Statistics, Department of Labor. The pay rolls were 46.5 compared with 45 for January and 61.2 for February of last year.

In the paper box industry the employment figures were 68.3 compared with 67.3 for January and 73.4 for February of last year while the pay roll index number for February was 53.7 compared with 51.4 for January and 65.1 for February of last year.

Mills equipped with the Marcy Rod Mill, can and do meet all comers in either price or quality. Their plants are neat and compact. Floor space is conserved. Upkeep, Labor and Conversion costs are low. Quality is of the highest.

Specific inquiries are invited.

MARCY OPEN-END ROD MILLS

for Perfect Beating of Every Type of Stock

1. Positively reduce power costs.
2. Absolute control under all conditions.
3. Maximum preservation of initial strength.
4. Preserve full fibre length.
5. Positive separation of fibre bundles.
6. Positively no unbeaten stock bypassed.

Send us a sample of your untreated pulp and we will send you proof.

PAPER MILL DIVISION

The MINE and SMELTER SUPPLY COMPANY

Denver, Colorado

CLINTON STARCHES

Special Grades for Beater and Top Sizing

Manufactured by

CLINTON CORN SYRUP REFINING COMPANY

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QUALITY SERVICE

TRIMBEY MACHINE WORKS

GLENS FALLS, N. Y.

Manufacturers of

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PROPORTIONING AND METERING SYSTEMS

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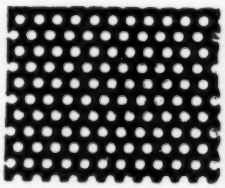
Perforated Metal Screens

For Pulp and Paper Mills



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CORN PRODUCTS REFINING CO.

17 Battery Place, New York, N. Y.

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Oxides of Iron
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GREENS

Chromic Oxides
Guignet's Green

REDS

All types and shades of Oxides of Iron

YELLOWS

Ochres
Iron Hydroxides

Asbestines and Talcs for Fillers

C. K. WILLIAMS & CO.

EASTON, PA.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, April 5, 1933.

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Prices are holding to schedule. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk; while the powder is selling at from 3½ cents to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—Demand for bleaching powder is only moderately active. Shipments against contract are moving slowly. Prices are generally holding to previously quoted levels. Bleaching powder is selling at from $1.75 to $2.00 per 100 pounds, in drums, at works.

CASEIN.—The casein market is firm. Domestic standard ground is quoted at from 7½ to 8 cents and finely ground at from 8½ to 9 cents per pound. Argentine standard ground is selling at 9 cents and finely ground at 9½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Steadiness prevails in the caustic soda market. The contract movement is fairly regular. Solid caustic soda is quoted at from $2.55 to $2.60; while the flake and the ground are selling at from $2.95 to $3.00 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is marking time. Demand is fairly persistent and prices remain unchanged. Imported china clay is quoted at from $10 to $15 per ton, ship side; while domestic paper making clay is selling at from $5 to $12 per ton, at mine.

CHLORINE.—Conditions in the chlorine market are fairly satisfactory. The contract movement is seasonal. Prices are generally holding to schedule. Chlorine is quoted at $1.75 per 100 pounds, in tanks or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market is slightly firmer. The grades of gum rosin used in the paper mills are now quoted at from $3.70 to $4.00 per 280 pounds, in barrels, at works; while wood rosin is selling at $2.75 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Business in the salt cake market is rather quiet. Prices remain unaltered. Salt cake is quoted at from $12.50 to $13.00; chrome salt cake at from $11.50 to $12.50 per ton, at works. Imported salt cake is selling at from $12.50 to $13.00 per ton, on dock.

SODA ASH.—The soda ash market is dull at present. Contract shipments are proceeding in moderate volume. Prices remain unchanged. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.05; in bags, $1.30; and in barrels, $1.43.

STARCH.—Paper mill demand for starch is mainly routine. The contract movement is fairly regular. Prices are decidedly firmer. Special paper making starch is quoted at $2.34 per 100 pounds, in bags; and at $2.61 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Request for sulphate of alumina is fairly active. Supplies are moving into consumption at a normal pace. Commercial grades are quoted at from $1.25 to $1.46; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market is steady. Sulphur is still quoted at $18 per long ton, on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—Trading in the talc market is light. Shipments against contract are moving slowly. Prices remain unchanged. Domestic talc is quoted at from $16 to $18 per ton, in bulk, at eastern mines; while imported talc is selling at from $18 to $22 per ton, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	6.50	@	38.00
Bonds	4.75	@	53.25
Index	6.00	@	12.00
Writings—			
Extra Superfine	6.50	@	15.00
Superfine	6.25	@	14.75
Tub sized	4.50	@	7.00
Engine sized	4.00	@	5.00
Book, Cased—			
S. & S. C.	4.25	@	5.00
M. F.	3.75	@	4.25
Coated and Enamel	5.00	@	9.00
Lithograph	5.00	@	9.00
Tissues—Per Ream—			
White No. 1	.50	@	.70
White No. 2	.45	@	.60
Anti-Tarnish M. G. only	.65	@	.70
Colored	.70	@	.90
Kraft	.65	@	.70
Manila	.55	@	.60
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Butchers	3.37½	@	—
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75
Common Bogus	1.50	@	3.00
Screenings	2.00	@	3.00
Card Middles	4.00	@	5.00
Glassine—			
Bleached, basis 25 lbs., No. 1	.09¼	@	—
No. 2	.11¼	@	—
Bleached, basis 20 lbs.	.11¼	@	—

(Delivered New York)

News, per ton—			
Roll, contract	45.00	@	—
Rolls, spot	45.00	@	—
Sheets	50.00	@	—
Side Runs	30.00	@	35.00
Kraft—			
No. 1 Domestic	4.50	@	4.75
No. 2 Domestic	2.75	@	3.00
Southern	2.62½	@	3.00
Imported	2.75	@	3.50
Boards—per ton—			
News	32.50	@	35.00
Straw	29.50	@	31.50
Chip	30.00	@	32.50
Binders' Boards	62.00	@	70.00
Kraft Liner	40.00	@	45.00
Standard 85 Test Jute Liner	27.75	@	30.00
Sgl. Mla. Ll. Chip	37.50	@	40.00

(F. o. b. Mill)

Wood Pulp Boards	70.00	@	80.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	18.50	@	20.00
Dry	19.50	@	21.00

(F. o. b. Mill)

No. 1 Domestic and Canadian	14.00	@	22.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—			
Bleached	1.80	@	2.25
Easy Bleaching	1.60	@	1.75
No. 1 strong unbleached	1.35	@	1.60
Mitscherlich unbleached	1.60	@	1.75
No. 2 strong unbleached	1.25	@	1.35
No. 1 Kraft	1.25	@	1.40
No. 2 Kraft	1.10	@	1.15
Sulphate—			
Bleached	1.85	@	2.15

(F. o. b. Pulp Mill)

Sulphite (Domestic and Canadian)—			
Bleached	1.75	@	3.75
Easy Bleaching	1.75	@	1.90
News	1.40	@	1.65
Mitscherlich unbleached	2.00	@	2.25
Kraft (Domestic)	1.25	@	2.75

(Delivered Paper Mills)

Soda Bleached	2.00	@	—

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	3.80	@	4.00
New White, No. 2	3.00	@	3.25
Silesias No. 1	3.25	@	4.00
New Unbleached	5.25	@	5.75
New Soft Blacks	2.75	@	3.00
Blue Overalls	3.00	@	3.50
Fancy	1.25	@	1.50
Washables	1.00	@	1.25
Mixed Khaki Cuttings	2.50	@	3.00
Pink Corset Cuttings	2.75	@	3.25
O. D. Khaki Cuttings	3.00	@	3.25
Men's Corduroy	1.00	@	1.25
New Mixed Blacks	2.25	@	2.50

Old Rags

White, No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.00	@	2.25
White, No. 2—			
Repacked	1.75	@	2.00
Miscellaneous	1.50	@	1.75
Thirds and Blues—			
Repacked	1.50	@	1.75
Miscellaneous	1.00	@	1.25
Black Stockings	2.00	@	2.25
Roofing Rags—			
No. 1	.53	@	.58
No. 2	.48	@	.53
No. 3	.43	@	.48
No. 4	.38	@	.43
No. 5A	.33	@	.38

Foreign Rags

New Rags

New Dark Cuttings	1.30	@	1.40
New Mixed Cuttings	1.50	@	1.60
New Light Silesias	3.00	@	3.25
Light Flannelettes	2.50	@	2.75
Unbleached Cuttings	4.50	@	5.00
New White Cuttings	4.00	@	4.25
New Light Oxfords	3.00	@	3.25
New Light Prints	1.85	@	2.25

Old Rags

No. 1 White Linens	5.25	@	5.50
No. 2 White Linens	4.50	@	4.75
No. 3 White Linens	3.25	@	3.75
No. 4 White Linens	1.75	@	2.25
No. 1 White Cotton	3.50	@	3.75
No. 2 White Cotton	2.75	@	3.25
No. 3 White Cotton	2.25	@	2.50
No. 4 White Cotton	1.40	@	1.50
Extra Light Prints	1.80	@	2.00
Ord. Light Prints	1.60	@	1.75
Med. Light Prints	1.40	@	1.55
Dutch Blue Cottons	1.35	@	1.40
French Blue Linens	1.80	@	1.90
German Blue Linens	1.70	@	1.80
German Blue Cottons	1.20	@	1.25
Checks and Blues	1.25	@	1.30
Lindsay Garments	.75	@	.80
Dark Cottons	.70	@	.75
Old Shopperies	.55	@	.60
New Shopperies	.60	@	.65
French Blues	1.25	@	1.30

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	.90	@	1.00
Domestic	1.00	@	1.10
Wool Tares, light	.70	@	.80
Wool Tares, heavy	.70	@	.80
Bright Bagging	.70	@	.75
Small Mixed Rope	.50	@	.60
Manila Rope—			
Foreign	1.35	@	1.40
Domestic	1.40	@	1.50
New Burlap Cut	1.00	@	1.50
Hessian Jute Threads—			
Foreign	2.60	@	2.75
Domestic	2.80	@	3.00

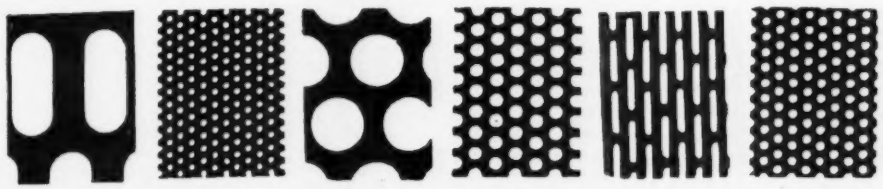
Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.00	@	2.10
Ordinary Hard White No. 1	1.70	@	1.80
Hard White No. 2	1.50	@	1.60
Soft White No. 1	1.45	@	1.55
Flat Stock—			
Stitchless	.55	@	.65
Overissue Mag.	.55	@	.65
Solid Flat Book	.50	@	.55
Crumpled No. 1	.40	@	.45
Solid Book Ledger	1.50	@	1.75
Ledger Stock	.45	@	.55
New B. B. Chips	.20	@	.25
Manilas—			
New Env. Cut	1.35	@	1.45
New Cuttings	1.00	@	1.05
Extra No. 1 old	.80	@	.90
Print	.35	@	.40
Bogus Wrapper	.30	@	.35
Container	.25	@	.30
Old Kraft Machine—			
Compressed bales	.65	@	.75
News—			
No. 1 White News	1.00	@	1.05
Strictly Overissue	.50	@	.55
Strictly Folded	.43	@	.48
No. 1 Mixed Paper	.25	@	.30

For
Drainer Bottoms
Blow Pit Bottoms
or any type of screen, either flat or formed to shape.
Of Brass, Copper, Monel, Stainless Steel or any desired Metal.
Low-Prices.

Screens For Pulp And Paper Mills



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Dietz Towel Interfolding Machines
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TOILET PAPER MACHINES
For making Toilet and Paper Towel Rolls
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AUTOMATIC TUBE MACHINES
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DIETZ MACHINE WORKS
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SUPERIOR ROSIN SIZE
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INDUSTRIAL CHEMICALS
Quantity production, careful control of raw materials, and specialization in the manufacture of chemicals for paper-making insure reliability and uniformity in P. M. C. products for the paper manufacturer.
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The Paper Trade Journal publishes the happenings of interest in the Pulp and Paper Industry—Covers it completely is saying it a little clearer.

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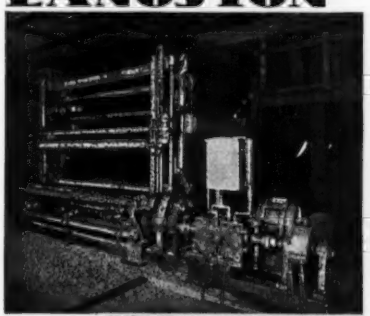


SLITTERS

The heavy-duty Langston Slitter can be had in any width, to wind any diameter. Use it as a winder or as a rewinder. Speed up to 3000 feet per minute. Makes rolls of uniform density, square-edged. Langston's Shear-Cut makes no dust—the paper is *clean-cut*, not ground apart. A catalog is yours for the asking.

SAMUEL M. LANGSTON CO., Camden, N. J.

Twines
(F. o. b. Mill)

Cotton—		
B. C., 18 basis	.30	.32
No. 1	.20	.22
No. 2	.19	.20
No. 3	.17	.18
A. Italian, 18 basis	.36	.37
Finisaed Jute—		
Dark, 18 basis	.18	.20
Light, 18 basis	.20	.22
Jute Wrapping, 3-6 Ply—		
No. 1	.15½	.16½
No. 2	.11¾	.12¾
Tube Rope—		
4-ply and larger	.08¼	.10¾
Fine Tube Rope—		
4-ply	.12¾	.12¾
3-ply	.13¾	.13¾
2-ply	.14¾	.14¾
Paper Makers Twine		
Balls	.09¼	.11¼
Box Twine, 2-3 ply	.11¾	.12¾
Jute Rope	.09	.10
White Hemp	.12¼	.15¾
Java Sisal—		
No. 1 Basis	.10	—
No. 2 Basis	.09	—
New Zealand Sisal	.10	—
Sisal Lath Yarn—		
No. 1	.12	.14
No. 2	.10	.12
Manila Twine	.23	.28

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	.53¾
Water Marked Sulphite Bond	.09	.12
Sulphite Bond	.04	.11
Superfine Writing	.18	.24
No. 1 Fine Writing	.14	.18
No. 2 Fine Writing	.12	.14
No. 3 Fine Writing	.07	.18
No. 1 M. F. Book	.06½	.07¾
No. 2 M. F. Book	.05¾	.06½
No. 1 S.&S.C. Book	.06¾	.07¾
No. 2 S.&S.C. Book	.05¾	.06½
Coated Book	.07½	.12
Coated Label	.07½	.10
No. 1 Manila	.04¼	.05¾
No. 1 Fibre	.04¾	.05¼
No. 2 Manila	.04¼	.04¾
Butcher's Manila	.03¼	.03¾
No. 1 Kraft	3.50	4.50
Southern Kraft	2.62½	—
No. 2 Kraft	2.62½	—
Wood Tag Boards	.04¼	.06¾
Sulphite Screenings	.03	.03¾
Manila Tissue	.07	.07½
White Tissue	.07¼	.07½
(Delivered Central Territory)		
News, per ton—		
Rolls, contract	45.00	—
Sheets	50.00	—
Boards, per ton—		
Plain Chip	27.50	—
Solid News	30.00	—
Manila Lined Chip	37.50	—
Patent coated	47.50	—
Container Lined—		
85 Test	50.00	55.00
100 Test	55.00	60.00

Old Papers
(F. o. b. Chicago)

Shavings—		
No. 1 White Envelope cuttings	1.50	1.55
No. 1 Hard White	1.40	1.45
No. 1 Soft White	1.00	1.10
Ledger & Writings	.55	.60
Solid Books	.45	.50
Blanks	1.00	1.05
Krafts	.70	.80
New Kraft Cuts	1.15	1.25
Manila Env. Cuts	1.25	1.30
Ex. No 1 Manila	.90	1.00
Print Manila	.30	.40
Overissue News	.45	.50
Old Newspapers—		
No. 1	.45	.50
Mixed Papers—		
No. 1	.25	.30
Roofing Stocks—		
No. 1	30.00	—
No. 2	28.00	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.04	.40
Ledgers	.06	.40
Writings—		
Superfine	.10	.18
Extra Fine	.15	.26
Fine	.15	.26
Fine, No. 2	.10	.25
Fine No. 3	.05½	.18
Book, M. F.	.04¾	.07
Book, S. S. & C.	.05	.07½
Book, Coated	.06	.16
Coated Lithograph	.06	.11
Label	.07	.11
No. 1 Jute Manila	.06	.09
Manila Sul., No. 1	.03	.05
Manila No. 2	.03	.04
No. 1 Kraft	.05¾	.06
No. 2 Kraft	.03¾	.04½
Southern Kraft No. 1	—	.02¾
Southern Kraft No. 2	—	.02¼
Common Bogus	.03	.04
(Delivered Philadelphia)		
News Print Rolls	46.00	—
Straw Board	32.00	—
News Board	30.00	—
Chip Board	30.00	—
Wood Pulp Board	70.00	80.00
Binder Boards—		
No. 1, per ton	73.00	75.00
No. 2, per ton	62.00	65.00
Carload lots	60.00	65.00
Tarred Felts—		
Regular	52.25	54.25
Slaters (per roll)	.84	.94
Best Tarred, 1-ply (per roll)	1.95	2.10
Best Tarred, 2-ply (per roll)	1.50	1.60
Best Tarred, 3-ply	2.00	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—		
New White, No. 1.	.03½	.04
New White, No. 2.	.02½	.04
Light Silesias	.02½	.03
Silesias, No. 1	.03	.03½
Black Silesias, soft.	.02½	.03
New Unbleached	.05	.05½
Washable, No. 1	.01	.01½
Blue Overall	.03	.03½
Cottons—According to grades—		
Washable, No. 2	.01	.02
New Blue	.01	.02
Fancy	.01¼	—
New Black Soft	.02	.03
New Light Seconds	.01	.02
New Dark Seconds	1.50	1.75
Khaki Cuttings—		
No. 1 O.D.	.03	.03½
No. 2 Mixed	.02½	.03
Corduroy	.02	.02½
New Canvas	.03½	.04
New Black Mixed	.02½	.03

Domestic Rags (Old)

White No. 1—		
Repacked	2.50	3.00
Miscellaneous	1.75	2.00
M. G.	3.00	3.50
Thirds and Blues—		
Miscellaneous	1.00	1.25
Repacked	1.50	1.75
Black Stockings (Export)	2.00	3.50
Roofing Stock—		
Foreign No. 1	.50	.75
Repacked	.70	.80

Bagging
(F. o. b. Phila.)

Gunny, No. 1—		
Foreign	1.25	1.50
Domestic	1.50	—
Manila Rope	2.00	2.25
Sisal Rope	1.25	1.50
Mixed Rope	1.00	1.10
Scrap Burlaps—		
No. 1	1.25	1.50
No. 2	.80	1.00
Wool Tares, heavy	2.75	—
Mixed Strings	1.15	1.25
No. 1 New Light Burlap	2.25	2.50
New Burlap Cuttings	2.00	2.25

Old Papers
(F. o. b. Phila.)

Shavings—		
No. 1 Hard White	1.60	1.70
No. 2 Hard White	1.50	1.60
No. 1 Soft White	1.40	1.45
No. 2 Soft White	1.10	1.15
No. 1 Mixed	.50	.60
No. 2 Mixed	.40	.50
Solid Ledger Stock	1.00	1.10
Writing Paper	.65	.70
No. 1 Books, heavy	.55	—
No. 2 Books, light	.40	—
No. 1 New Manila	1.10	1.15
No. 1 Old Manila	.60	.65
Print Manila	.40	.45
Container Manila	.35	.40
Old Kraft	.85	.90
Common Paper	.17½	.25
No. 1 Mixed Paper	.20	.30
Straw Board, Chip	.20	.30
Binders Board Chip	.20	.30
Corrugated Board	.35	.40
Overissue News	.45	.50
Old Newspaper	.30	.35

BOSTON

Paper
(F. o. b. Mill)

Ledgers—		
Sulphite	.06	.12½
Rag Content	.12	.30
All Rag	.36	.52½
Bonds—		
Sulphite	.05¾	.11½
Rag Content	.12	.30
All Rag	.36	.65
Writings	.06½	.20
Superfines	.11	.31
Book, Super	.06	.09
Book, M. F.	.05½	.08½
Book, Coated	.08½	.18
Coated Litho	.09	.12
Label	.09½	.15
Jute Manila No. 1	.11	.13
Manila, Sul. No. 1	.04¾	.06½
Manila, Sul. No. 2	.03¾	.04½
No. 1 Kraft	—	.04¾
No. 2 Kraft	.02½	—
(F. o. b. Boston)		
Southern Kraft	.02½	—
(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)		
Common Bogus	.02	.02¾
(Delivered New England points)		
News Print, rolls	44.50	—
Straw Board, rolls	.009	35.00
Straw Board in Sheets, basis 35s to 70s	—	40.00
Filled News Board	32.50	—
Chip Board	27.50	—
Chip Board (Creasing)	27.50	30.00
Single Manila Lined Chip	—	37.50
Single White, Patent Coated News Board—Bender	45.00	55.00
Wood Pulp Board	70.00	75.00
Binder Boards	62.00	75.00

Old Papers
(F. o. b. Boston)

Shavings—		
No. 1 Soft White	1.25	1.40
No. 1 Old Manila	.50	.60
No. 1 Mixed	.60	.70
No. 2 Mixed	.40	.50
Solid Ledger Books	1.20	1.40
Overissue Ledger Stock	1.15	1.30
Mixed Ledgers	.60	.70
No. 1 Books, heavy	.55	.65
No. 1 Books, light	—	.30
Crumpled Stitchless Book Stock	.50	.60
Manila Env. Cuttings	1.25	1.30
No. 1 Old Manila	.50	.60
White Blank News	1.00	1.05
No. 1 Kraft	.75	.85
Manila	.80	.90
No. 1 Mixed Papers	.17½	.22½
Print Manila	.30	.40
Overissue News	.35	.45
Old Newspapers	.32½	.37½
Box Board, Chip	.17½	.20
Corrugated Boxes	.25	.30
Screening Wrappers	.25	.32½

Bagging
(F. o. b. Boston)

Gunny No. 1—		
Foreign	1.00	—
Domestic	.62½	.67½
Manila Rope—		
Foreign	1.45	—
Domestic	—	1.60
Transmission Rope	1.00	—
Mixed Strings	.25	.30
Jute Rope	—	.75
Jute Carpet Threads	.25	.30
Bleachery Burlap	1.75	2.00
Scrap Burlap	.75	1.00
No. 1 Scrap Burlap	.65	.75
Scrap Sisal	.80	—
Scrap Sisal for shredding	—	.90
Wool Tares, heavy	.65	.75
New Burlap Cutting	.75	.90
Australian Wool Pouches	1.75	2.00
Heavy Baling Bagging	.90	1.10
Paper Mill Bagging	.30	.35
Bagging No. 2	.20	.25
No. 1 Burlap	1.75	2.00

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—		
New Light Prints	—	.01½
New White No. 1	—	.03½
New White No. 2	.02¾	.03¼
Silesias No. 1	—	.03
New Black Silesias	.02½	.02¾
New Unbleached	—	.04½
Fancy	—	.02½
Washable	—	.01½
Cottons—According to grades—		
Blue Overalls	—	.03¾
New Black, soft	.04	.04½
Khaki Cuttings	.03	.03½
O. D. Khaki	.03½	.03¾
Corduroy	.02¾	.03
New Canvas	—	.05
B.V.D. Cuttings	.04	.04¼

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	—
White No. 1—		
Repacked	3.00	3.50
Miscellaneous	1.50	1.75
White No. 2—		
Repacked	.02¾	.02½
Miscellaneous	.02	.02¼
Twos and Blues	.90	1.00
Thirds and Blues—		
Repacked	.75	.85
Miscellaneous	.70	.75
Black Stockings	2.00	2.25
Roofing Stock—		
No. 1	.40	.45
No. 2	.35	.40
No. 3	.25	.30

Foreign Rags
(F. o. b. Boston)

Dark Cottons	.50	.60
New No. 1 White Shirt Cuttings	3.75	4.00
Dutch Blues	1.25	1.50
New Checks & Blues	2.25	2.50
Old Fustians	—	.75
Old Linsey Garments	.55	.65

TORONTO

Paper
(F. o. b. Mill)

Bond—		
No. 1 Sulphite	.09¾	—
No. 2 Sulphite	.07½	—
No. 1 Colored	.09¼	—
No. 2 Colored	.08¾	.10¾
Ledgers (sulphite)		
Ledgers, No. 1	.34½	—
Ledgers, No. 2	.25½	—
Writing	.09	.09½
Book—		
No. 1 M. F. (Carloads)	6.20	—
No. 3 M. F. (Carloads)	5.70	—
No. 4 M. F. (carloads)	4.75	—
No. 1 S. C. (carloads)	7.15	—
No. 3 S. C. (carloads)	6.20	—
No. 4 S. C. (carloads)	5.20	—
No. 1 Coated and Litho	12.50	—
No. 2 Coated and Litho	10.50	—
No. 3 Coated and Litho	10.00	—
Coated tinted	14.00	—
Wrapping—		
Rag Brown	4.25	—
White Wrap	2.00	—
"B" Manila	4.75	—
No. 1 Manila	5.25	—
Fiber	5.25	—
Kraft, M. F.	5.75	—
Kraft No. 2	5.25	—

(F.O.B. Cars Toronto)

News, per ton—		
Rolls (contract)	45.50	—
Sheets	50.50	—

Pulp
(F. o. b. Mill)

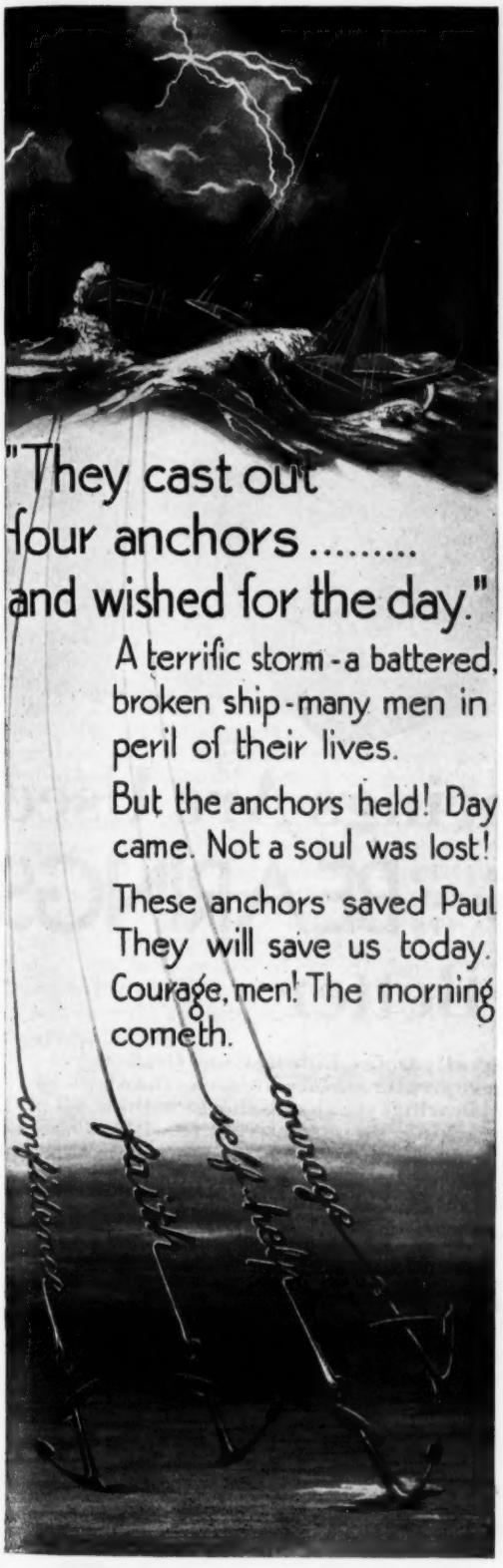
Ground Wood	18.00	20.00
Sulphite easy bleaching	40.00	—
Sulphite, news grade	38.00	—
Sulphite, bleached	48.00	58.00
Sulphate	50.00	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—		
White Env. Cut	1.80	—
Soft White	1.40	—
White Blk. News	1.25	—
Book and Ledger—		
Flat Magazine and Book Stock (old)	.90	—
Light and Crumpled Book Stock	.80	—
Ledgers and Writings	1.00	—
Manilas—		
New Manila Cut	1.25	—
Printed Manilas	.55	—
Kraft	1.25	—
News and Scrap—		
Strictly Overissue	.50	—
Strictly Folded	.50	—
No. 1 Mixed Paper	.40	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.04¼	.04¼
Fancy Shirt Cuttings	.02¼	.02½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self-help
courage
faith

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PARCHMENT (KALAMAZOO COUNTY) MICHIGAN

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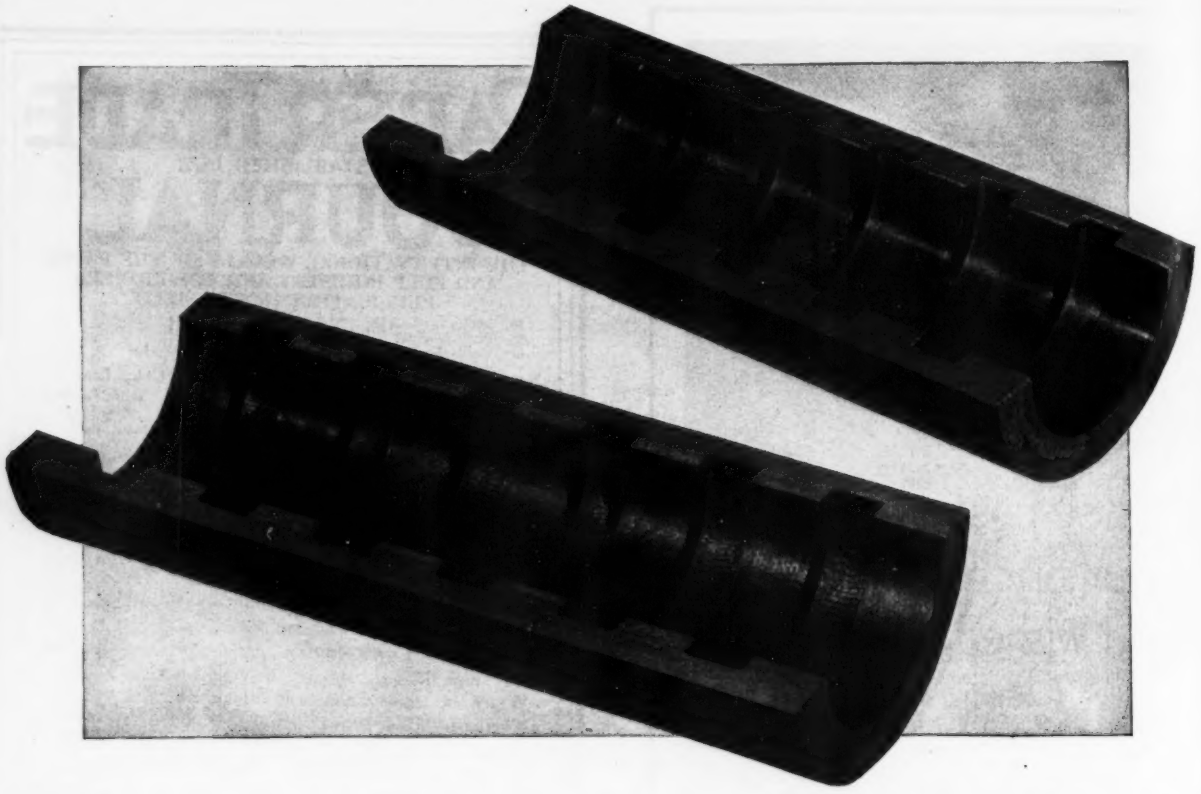

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